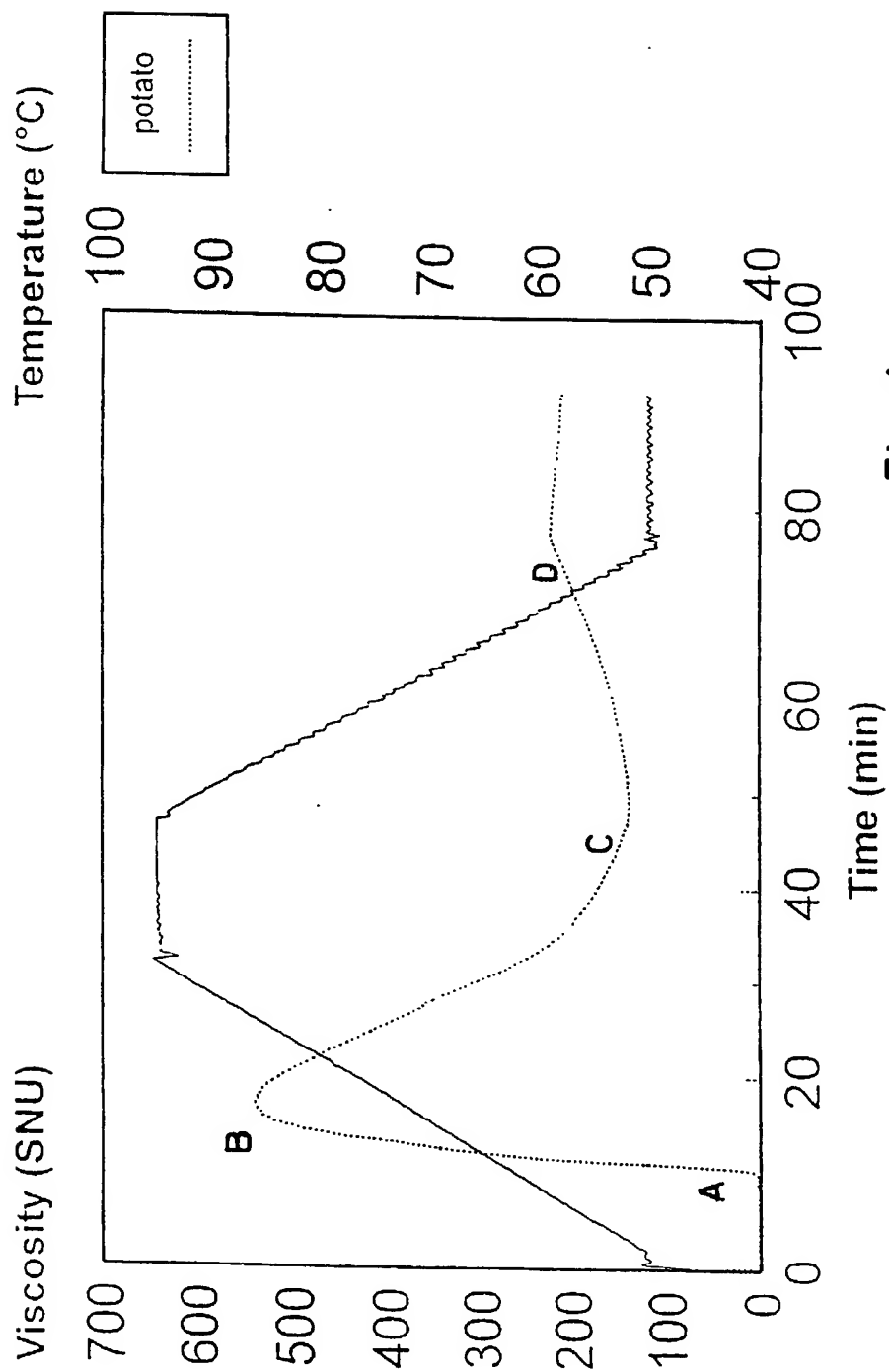


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1. 1

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WO 96/34968

PCT/GB96/01075



2/75

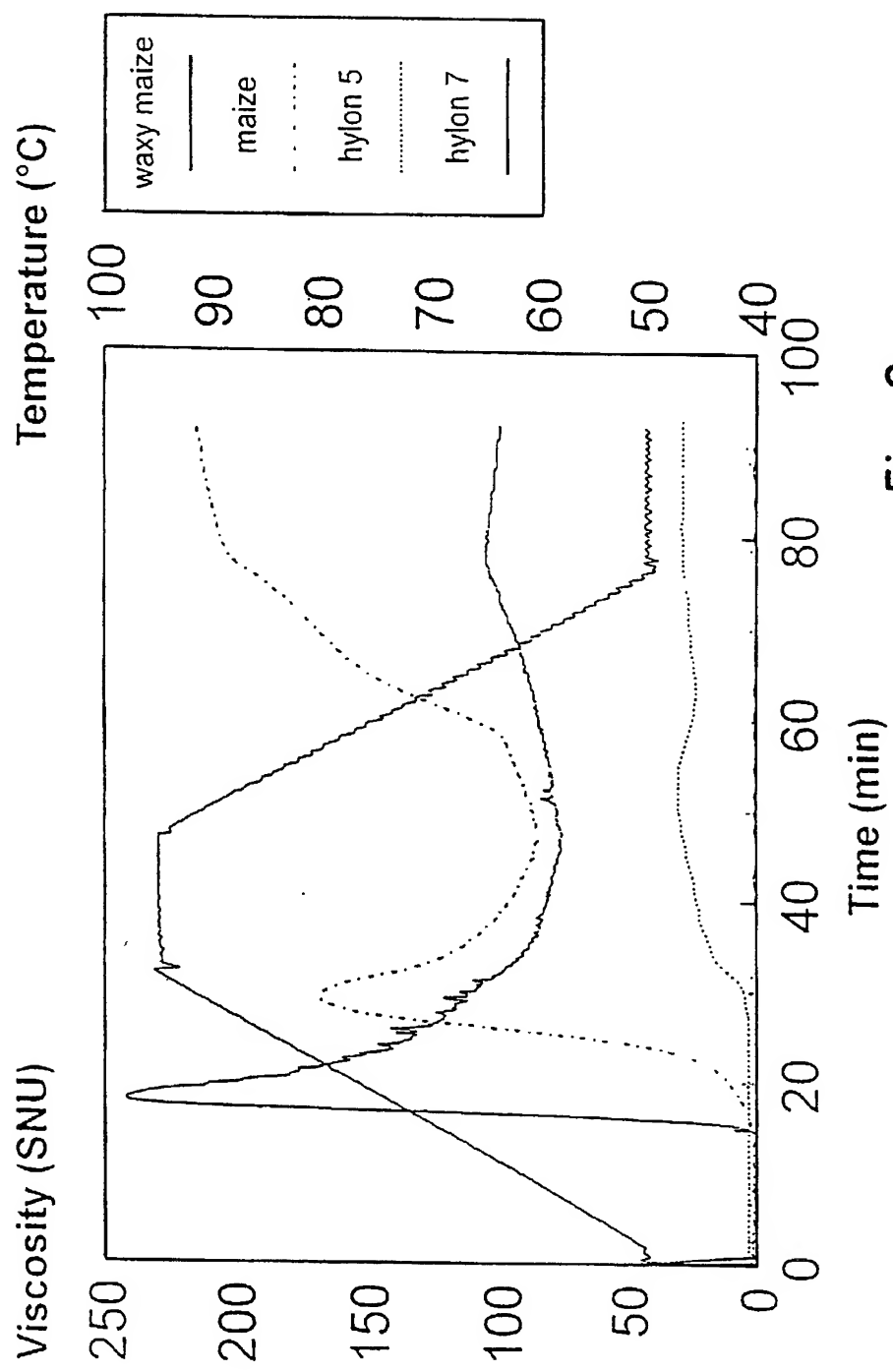


Fig. 2

3 / 75

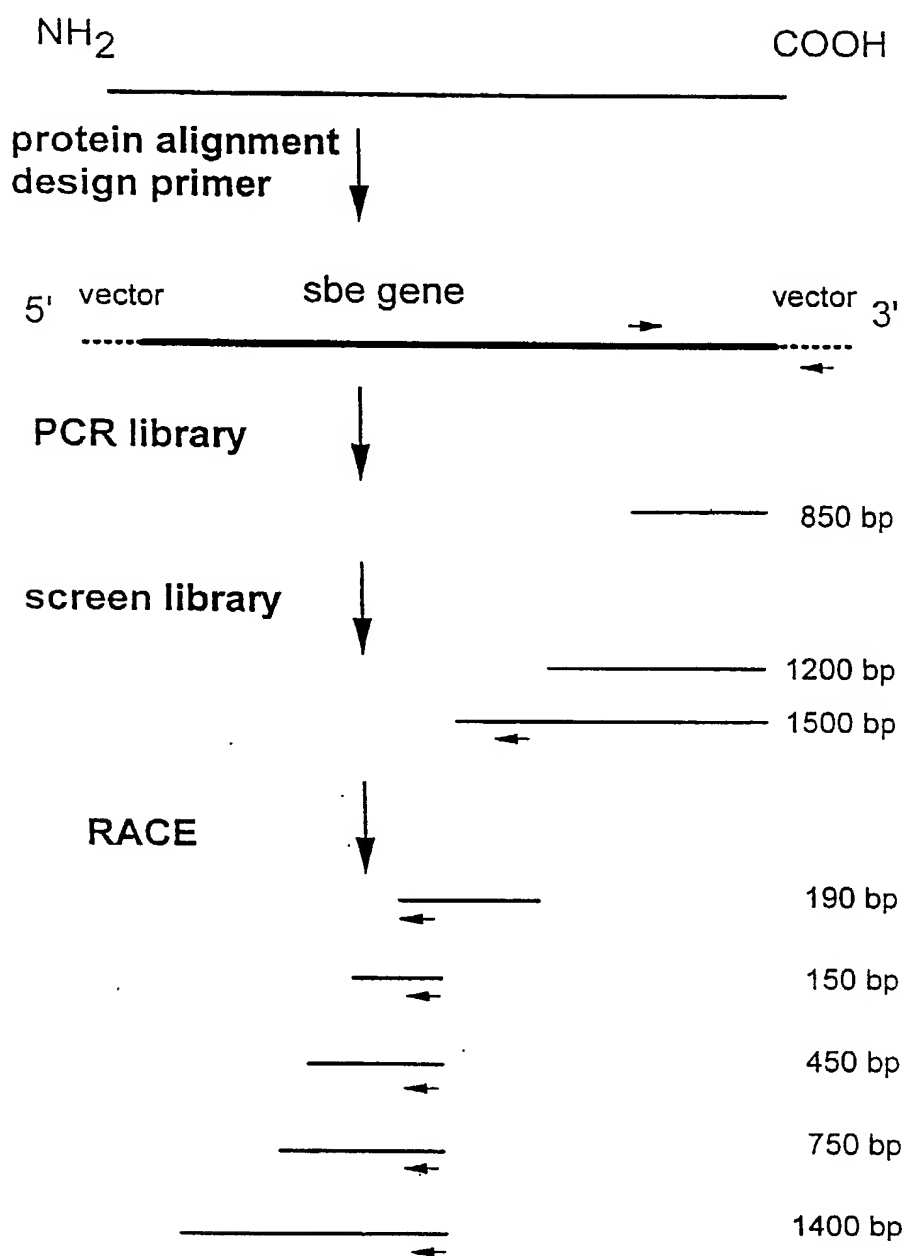


Fig. 3



4/75

Fig.4a  
Sheet 2

Majority	P	A	S	P	T	I	D	R	G	I	A	L	H	K	M	I	H	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N	
maize 2	P	S	T	P	T	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N	
pea 1	P	S	T	P	L	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N	
maize 1	P	A	S	P	T	I	D	R	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	E	G	Y	L	N	F	M	G	N	
rice 1	P	A	S	P	T	I	N	R	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	E	G	Y	L	N	F	M	G	N	
potato1	D	A	S	P	V	V	D	A	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	E	G	Y	L	N	F	M	G	N	
human	P	F	T	P	V	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	H	G	L	G	G	E	G	Y	L	N	F	M	G	N
Majority	F	S	L	G	D	A	D	H	L	R	Y	K	G	M	N	A	F	D	Q	A	M	N	A	L	E	E	K	F	S	F	L	A	S	S	
maize 2	F	D	L	G	D	A	D	Y	L	R	Y	H	G	M	Q	E	F	D	Q	A	M	Q	H	L	E	Q	K	Y	E	G	F	M	T	S	E
pea 1	F	D	L	G	D	A	D	Y	L	R	Y	H	G	M	Q	E	F	D	R	A	M	Q	H	L	E	E	T	Y	E	G	F	M	T	S	E
maize 1	W	S	L	V	D	T	D	H	L	R	Y	K	Y	M	N	A	F	D	Q	A	M	N	A	L	E	E	R	F	S	F	L	S	S	S	
rice 1	W	S	L	V	D	T	D	H	L	R	Y	K	Y	M	N	A	F	D	Q	A	M	N	A	L	E	E	R	F	S	F	L	S	S	S	
potato1	W	N	L	A	D	S	E	H	L	R	Y	K	F	L	N	A	F	D	R	A	M	N	S	L	E	E	K	F	S	F	L	A	S	G	
human	F	H	L	T	D	D	L	L	R	Y	K	F	L	N	A	F	D	R	D	M	N	R	L	E	E	R	Y	G	W	L	A	A	P		
Majority	K	V	G	C	D	L	P	G	K	Y	K	V	A	L	D	S	D	A	L	V	F	G	G	H	G	R	V	G	H	D	V	D	H	F	
maize 2	R	I	G	C	R	K	P	G	K	V	Y	K	V	V	L	D	S	D	A	G	L	F	G	G	F	S	R	I	H	A	A	E	H	F	
pea 1	K	V	G	C	L	K	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	F	G	G	F	N	R	R	L	N	H	T	A	E	Y
maize 1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	F	G	G	H	G	R	V	G	H	D	V	D	H	F
rice 1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	F	G	G	H	G	R	V	G	H	D	V	D	H	F
potato1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	F	G	G	H	G	R	V	G	H	D	V	D	H	F
human	R	V	G	T	A	L	P	G	K	F	K	I	V	L	D	S	D	A	A	E	Y	F	G	G	H	Q	R	L	D	H	S	T	D	F	F

Fig. 4a SHEET 1



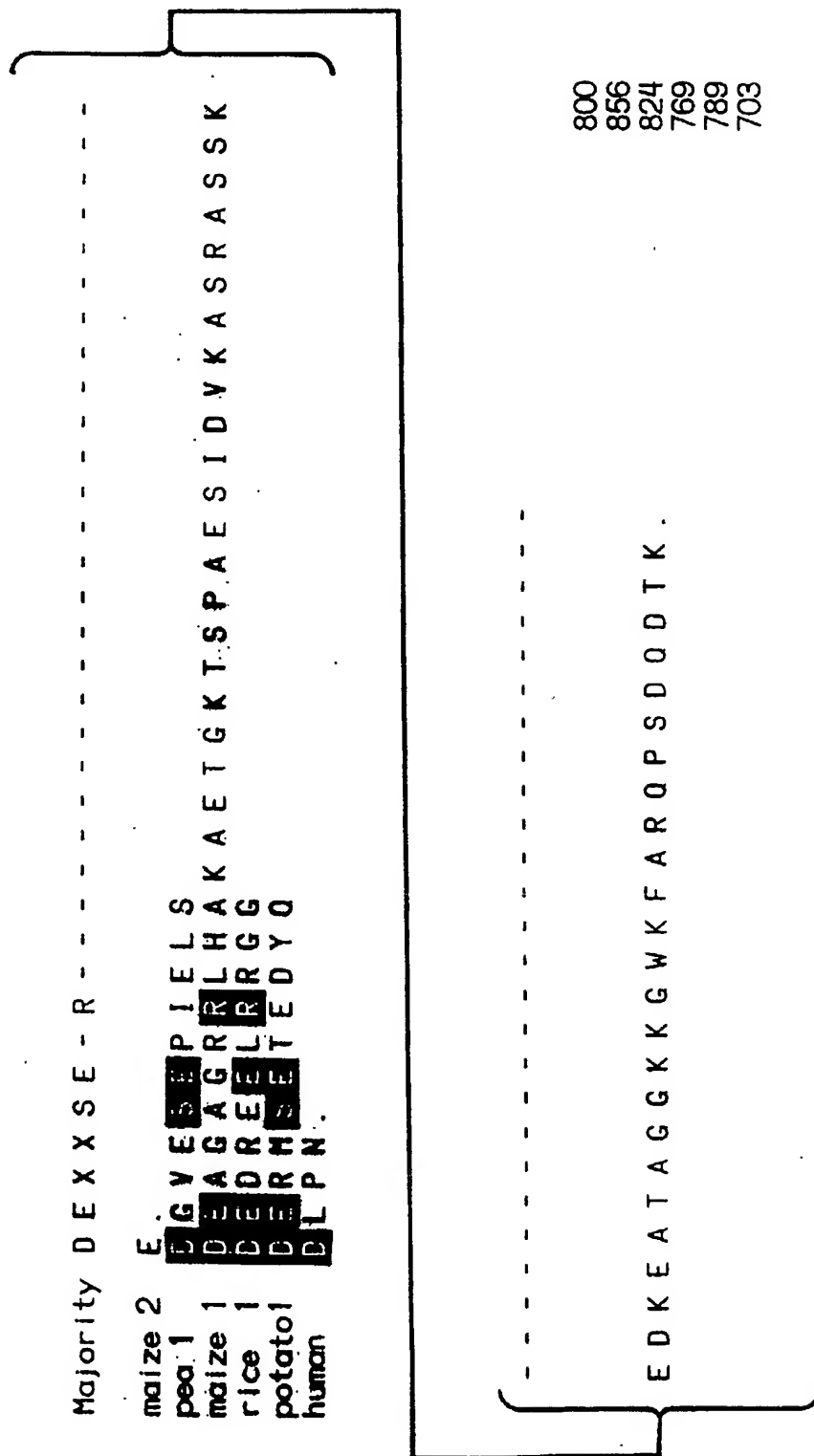
5/75

[illegible]

Fig. 4a SHEET 2



6/75



SUBSTITUTE SHEET (RULE 26)

Fig. 4a SHEET 3

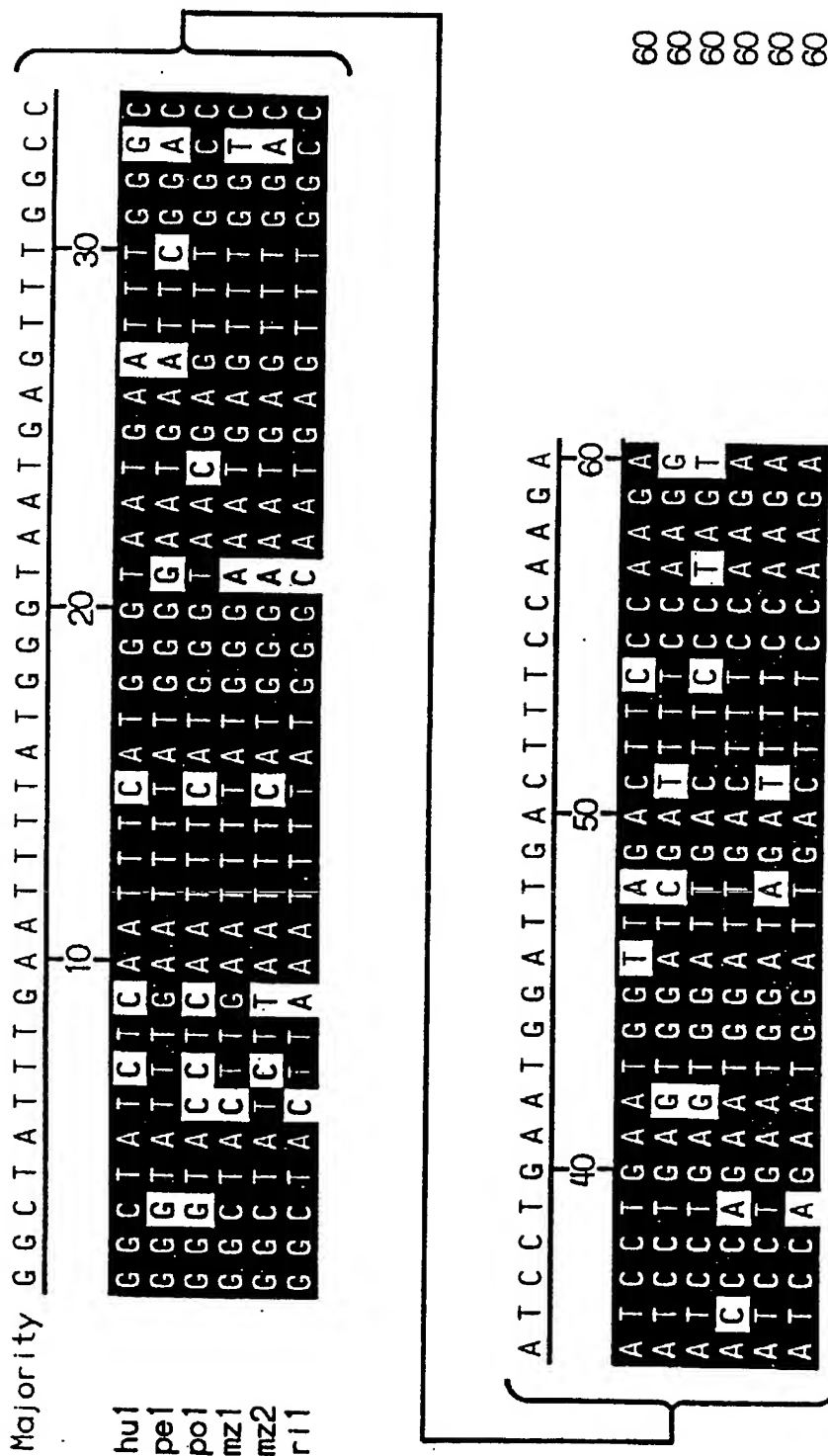


Fig. 4b



8/75

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AAGGAATGAATAAAAGGATAGATTTGTAAAAACCCTAAGGAGAGA  
TTCCTTACTTATTTTCCTATCTAAACATTTTGGGATTCCTCTCT  
M N K R I D L

GTTCCATCAGTGTACAAATCTAATGGATTTCAGCAGTAATGGTGAT  
CAAGGTAGTCACATGTTTAGATTACCTAAGTCGTCATTACCACTA  
V P S V Y K S N G F S S N G D

Bgl II EcoR I  
TCACGGAAGATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATTC  
AGTGCCTTCTAGAACCGACTTTTCAGAAGAATGTTAAGGCTTAAG  
S R K I L A E K S S Y N S E F

ACCCAGAGTGATAGCTCCTCATCCTCAACAGACCAATTTGAGTTC  
TGGGTCTCACTATCGAGGAGTAGGAGTTGTCTGGTTAAACTCAAG  
T Q S D S S S S S T D Q F E F

AGTTCAACAATGGAACACGCTAGCCAGATTAAACTGAGAACGAT  
TCAAGTTGTTACCTTGTGCGATCGGTCTAATTTGACTCTTGCTA  
S S T M E H A S Q I K T E N D

GATTTTGCTTCATCACTACAAGTACAAGAAGGTGGTAAACTGGAG  
CTAAAACGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACCTC  
D F A S S L Q L Q E G G K L E

Fig 5  
Sheet 2

Fig. 5 SHEET 1





WO 96/34968

PCT/GB96/01075

9/75

Bgl II

CTCCTATCACTTATCAGATCTCTATTTTTTCTCTTAATTCCAACC 90  
GAGGATAGTGAATAGTCTAGAGATAAAAAAGAGAATTAAGGTTGG

AGAAGAAAGATGGTGTATACACTCTCTGGAGTTCGTTTTCTACT 180  
TCTTCTTTCTACCACATATGTGAGAGACCTCAAGCAAAGGATGA  
M V Y T L S G V R F P T

CGGAGGAATGCTAATGTTTCTGTATTCTTGAAAAAGCACTCTCTT 270  
GCCTCCTTACGATTACAAAGACATAAGAACTTTTTCTGTGAGAGAA  
R R N A N V S V F L K K H S L

CGACCTTCTACAGTTGCAGCATCGGGGAAAGTCCTTGTGCCTGGA 360  
GCTGGAAGATGTCAACGTCGTAGCCCCTTTCAGGAACACGGACCT  
R P S T V A A S G K V L V P G

ACTGAGACATCTCCAGAAAATTCCCCAGCATCAACTGATGTAGAT 450  
TGACTCTGTAGAGGTCTTTTAAGGGGTCGTAGTTGACTACATCTA  
T E T S P E N S P A S T D V D

GACGTTGAGCCGTCAAGTGATCTTACAGGAAGTGTTGAAGAGCTG 540  
CTGCAACTCGGCAGTTCACTAGAATGTCCTTCACAACTTCTCGAC  
D V E P S S D L T G S V E E L

GAGTCTAAACATTAAATACTTCTGAAGAGACAATTATTGATGAA 630  
CTCAGATTTTGTAATTTATGAAGACTTCTCTGTTAATAACTACTT  
E S K T L N T S E E T I I D E

Fig 5 SHEET 2

SUBSTITUTE SHEET (RULE 26)

10/75



TCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCTGGACTTGGT  
AGACTATCCTAGTCTCTCTCCCCGTAGGGAGGTGGACCTGAACCA  
S D R I R E R G I P P P G L G

CACCTTGATTACAGGTATTCACAGTACAAGAACTGAGGGAGGCA  
GTGGAACCTAATGTCCATAAGTGTCATGTTCTTTGACTCCCTCCGT  
H L D Y R Y S O Y K K L R E A

GAAAAAATGGGTTTCACTCGTAGTGCTACAGGTATCACTTACCGT  
CTTTTTTACCCAAAGTGAGCATCACGATGTCCATAGTGAATGGCA  
E K M G F T R S A T G I T Y R

AACAATTGGGACGCAAATGCTGACATTATGACTCGGAATGAATTT  
TTGTTAACCCTGCGTTTACGACTGTAATACTGAGCCTTACTTAA  
N N W D A N A D I M T R N E F

GCAATTCCTCATGGGTCCAGAGTGAAGATACGTATGGACACTCCA  
CGTTAAGGAGTACCCAGGTCTCACTTCTATGCATACCTGTGAGGT  
A I P H G S R V K I R M D T P

Fig.5  
Sheet4

Fig. 5 SHEET 3

11/75



Hinc II

CAGAAGATTTATGAAATAGACCCCTTTTGACAACTATCGTCAA  
GTCTTCTAAATACTTTATCTGGGGGAAAAGTGTGATAGCAGTT 720  
Q K I Y E I D P L L T N Y R Q

ATTGACAAGTATGAGGGTGGTTTGAAGCCTTTTCTCGTGGTTAT  
TAACTGTTCACTACTCCACCAAACCTTCGGAAAAGAGCACCAATA 810  
I D K Y E G G L E A F S R G Y

Pvu II

GAGTGGGCTCTTGGTGCCAGTCAGCTGCCCTCATTGGAGATTTTC  
CTCACCCGAGAACCACGGGTCAGTCGACGGGAGTAACCTCTAAAG 900  
E W A L G A O S A A L I G D F

GGTGTCTGGGAGATTTTTCTGCCAAATAATGTGGATGGTTCTCCT  
CCACAGACCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGA 990  
G V W E I F L P N N V D G S P

TCAGGTGTTAAGGATTCCATTCTGCTTGGATCAACTACTCTTTA  
AGTCCACAATTCCTAAGGTAAGGACGAACCTAGTTGATGAGAAAT 1080  
S G V K D S I P A W I N Y S L

Fig. 5 SHEET 4



12/75

CAGCTTCCTGATGAAATTCCATATAATGGAATACATTATGATCCA  
GTCGAAGGACTACTTTAAGGTATATTACCTTATGTAATACTAGGT  
Q L P D E I P Y N G I H Y D P

CCAAAGTCGCTGAGAATATATGAATCTCATATTGGAATGAGTAGT  
GGTTTCAGCGACTCTTATATACTTAGAGTATAACCTTACTCATCA  
P K S L R I Y E S H I G M S S

Hind III

CTTCCTCGCATAAAAAAGCTTGGGTACAATGCGCTGCAAATTATG  
GAAGGAGCGTATTTTTTTCGAACCCATGTTACGCGACGTTTAATAC  
L P R I K K L G Y N A L Q I M

ACAAATTTTTTTTGCACCAAGCAGCCGTTTTTGAACGCCCGACGAC  
TGTTTAAAAAACGTGGTTCGTCGGCAAAACCTTGCGGGCTGCTG  
T N F F A P S S R F G T P D D

CTCATGGACATTGTTTACAGCCATGCATCAAATAATACTTTAGAT  
GAGTACCTGTAACAAGTGTCGGTACGTAGTTTATTATGAAATCTA  
L M D I V H S H A S N N T L D

Fig.5  
Sheet  
6

Fig.5 SHEET 5

13/75



CCCGAAGAGGAGAGGTATATCTTCCAACACCCACGGCCAAAGAAA 1170  
GGGCTTCTCCTCTCCATATAGAAGGTTGTGGGTGCCGGTTTCTTT  
P E E E R Y I F Q H P R P K K

CCGGAGCCTAAAATTAACATACGTGAATTTTAGAGATGAAGTT 1260  
GGCCTCGGATTTTAATTGAGTATGCACTTAAATCTCTACTTCAA  
P E P K I N S Y V N F R D E V

GCTATTCAAGAGCATTCTTATTACGCTAGTTTTGGTTATCATGTC 1350  
CGATAAGTTCTCGTAAGAATAATGCGATCAAAACCAATAGTACAG  
A I Q E H S Y Y A S F G Y H V

CTTAAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTGTTGTT 1440  
GAATTCAGAACTAACTATTTTCGAGTACTCGATCCTTAACAACAA  
L K S L I D K A H E L G I V V

GGACTGAACATGTTTGACTGCACCGATAGTTGTTACTTTCACTCT 1530  
CCTGACTTGTACAACTGACGTGGCTATCAACAATGAAAGTGAGA  
G L N M F D C T D S C Y F H S

Fig. 5 SHEET 6

SUBSTITUTE SHEET (RULE 26)

14/75



Sac I

GGAGCTCGTGGTTATCATTGGATGTGGGATTCCCGCCTCTTTAAC  
CCTCGAGCACCAATAGTAACCTACACCCTAAGGGCGGAGAAATTG  
G A R G Y H W M W D S R L F N

TGGTGGTTGGATGCGTTCAAATTTGATGGATTTAGATTTGATGGT  
ACCACCAACCTACGCAAGTTTAACTACCTAAATCTAACTACCA  
W W L D A F K F D G F R F D G

ACTGGGAACCTACGAGGAATACTTTGGACTCGCAACTGATGTGGAT  
TGACCCTTGATGCTCCTTATGAAACCTGAGCGTTGACTACACCTA  
T G N Y E E Y F G L A T D V D

TTCCCAGATGCAATTACCATTGGTGAAGATGTTAGCGGAATGCCG  
AAGGGTCTACGTTAATGGTAACCACTTCTACAATCGCCTTACGGC  
F P D A I T I G E D V S G M P

CGGCTGCATATGGCAATTGCTGATAAACGGATTGAGTTGCTCAAG  
GCCGACGTATACCGTTAACGACTATTTGCCTAACTCAACGAGTTC  
R L H M A I A D K R I E L L K

ACAAATAGAAGATGGTCGGAAGTGTGTTTCATACGCTGAAAGT  
TGTTTATCTTCTACCAGCCTTTTCACACAAAGTATGCGACTTTCA  
T N R R W S E K C V S Y A E S

Fig 5  
Sheet 8

Fig. 5 SHEET 7

SUBSTITUTE SHEET (RULE 26)

15/75



TATGGAACTGGGAGGTACTTAGGTATCTTCTCTCAAATGCGAGA 1620  
ATACCTTTGACCCTCCATGAATCCATAGAAGAGAGTTTACGCTCT  
Y G N W E V L R Y L L S N A R

GTGACATCAATGATGTATATTCACCACGGATTATCGGTGGGATTC 1710  
CACTGTAGTTACTACATATAAGTGGTGCCTAATAGCCACCCTAAG  
V T S M M Y I H H G L S V G F

Hinc II

GCTGTTGTGTATCTGATGCTGGTCAACGATCTTATTCATGGGCTT 1800  
CGACAACACATAGACTACGACCAGTTGCTAGAATAAGTACCCGAA  
A V V Y L M L V N D L I H G L

ACATTTTGTATTCCCGTCCAAGAGGGGGGTGTTGGCTTTGACTAT 1890  
TGTA AACATAAGGGCAGGTTCTCCCCCACAACCGAAACTGATA  
T F C I P V Q E G G V G F D Y

AAACGGGATGAGGATTGGAGAGTGGGTGATATTGTTTCATACACTG 1980  
TTTGCCCTACTCCTAACCTCTCACCCTATAACAAGTATGTGAC  
K R D E D W R V G D I V H T L

CATGATCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTG 2070  
GTACTAGTTTCGAGATCAGCCACTATTTTGATATCGTAAGACCGAC  
H D Q A L V G D K T I A F W L

Fig. 5 SHEET 8

SUBSTITUTE SHEET (RULE 26)

16/75

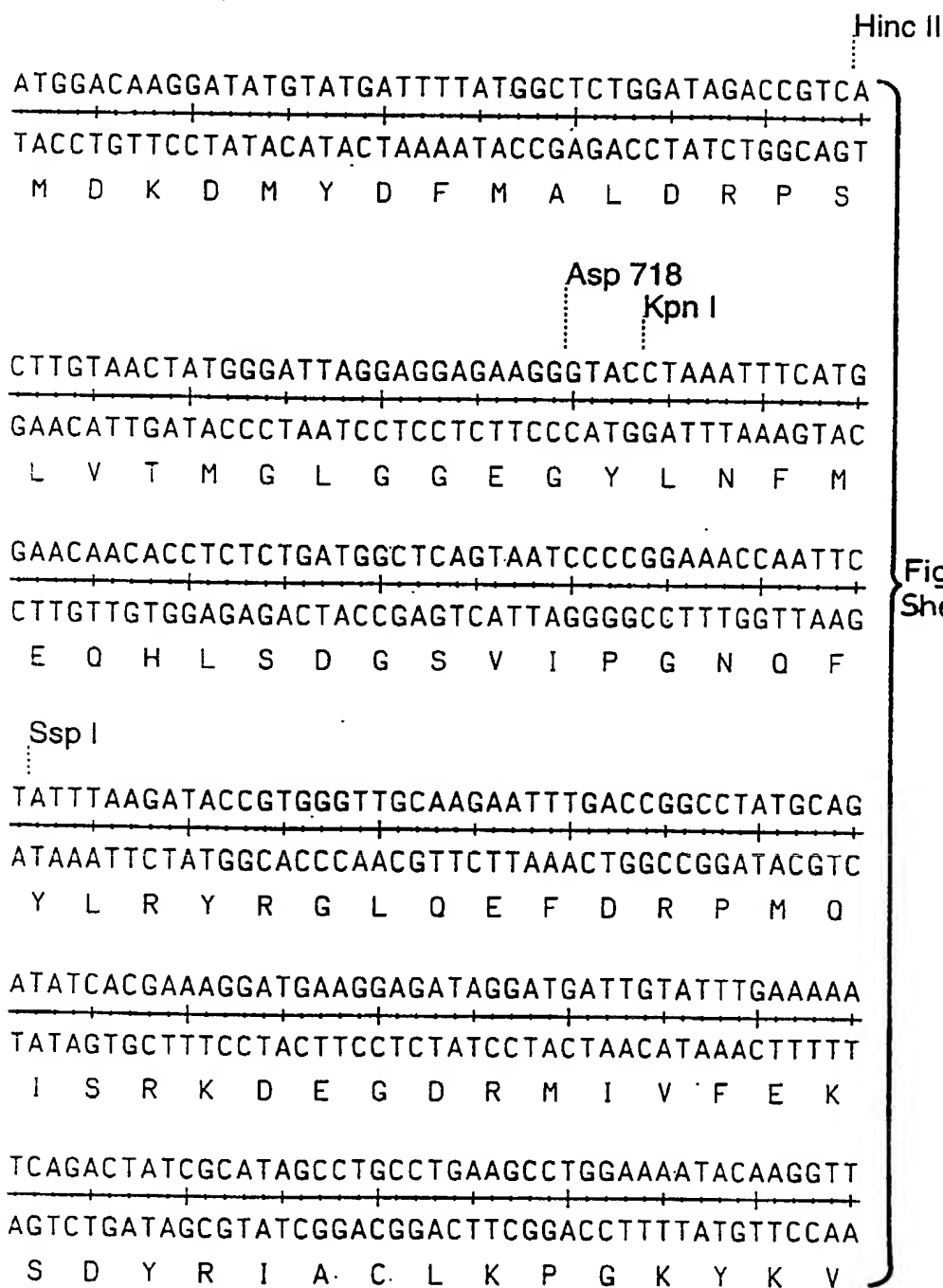
Fig.5  
Sheet 10

Fig.5 SHEET 9

SUBSTITUTE SHEET (RULE 26)





17/75

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TGTAAGTAATTATCTAGCACCCCTATCGTAACGTGTTCTACTAATCC  
T S L I D R G I A L H K M I R

EcoR I

GGAAATGAATTCGGCCACCCTGAGTGGATTGATTTCCCTAGGGCT 2250  
CCTTTACTTAAGCCGGTGGGACTCACCTAACTAAAGGGATCCCGA  
G N E F G H P E W I D F P R A

AGTTATGATAAATGCAGACGGAGATTTGACCTGGGAGATGCAGAA 2340  
TCAATACTATTTACGTCTGCCTCTAACTGGACCCTCTACGTCTT  
S Y D K C R R R F D L G D A E

TATCTTGAAGATAAATATGAGTTTATGACTTCAGAACACCAGTTC 2430  
ATAGAACTTCTATTTATACTCAAATACTGAAGTCTTGTGGTCAAG  
Y L E D K Y E F M T S E H Q F

GGAAACCTAGTTTTTGTCTTTAATTTTCACTGGACAAAAAGCTAT 2520  
CCTTTGGATCAAAAACAGAAATTAAGTGACCTGTTTTTCGATA  
G N L V F V F N F H W T K S Y

GCCTTGGACTCAGATGATCCACTTTTTGGTGGCTTCGGGAGAATT 2610  
CGGAACCTGAGTCTACTAGGTGAAAAACACCGAAGCCCTCTTAA  
A L D S D D P L F G G F G R I

Fig. 5 SHEET 10

SUBSTITUTE SHEET (RULE 26)



18/75

Ssp I

GATCATAATGCCGAATATTTACCTTTGAAGGATGGTATGATGAT  
CTAGTATTACGGCTTATAAAGTGGAAACTTCCTACCATACTACTA  
D H N A E Y F T F E G W Y D D

GTCTATGCACTAGTAGACAAAGAAGAAGAAGAAGAAGAAGAA  
CAGATACGTGATCATCTGTTTCTTCTTCTTCTTCTTCTTCTTCTT  
V Y A L V D K E E E E E E E E

TGAACGAACTTGTGATCGCGTTGAAAGATTTGAACGCTACATAGA  
ACTTGCTTGAACACTAGCGCAACTTTCTAACTTGCGATGTATCT

TCATGTGACACAAGGTTTGCAATTCTTTCCACTATTAGTAGTGCA  
AGTACACTGTGTTCCAAACGTTAAGAAAGGTGATAATCATCACGT

EcoR I Pst I

GATGAATTTATGTCGAATGCTGGGACGATCGAATTCCTGCAGGCC  
CTACTTAAATACAGCTTACGACCCTGCTAGCTTAAGGACGTCCGG

Fig 5  
Sheet  
12

Fig. 5 SHEET 11

19/75



CGTCCTCGTTCAATTATGGTGTATGCACCTTGTA AACAGCAGTG 2700  
GCAGGAGCAAGTTAATACCACATACGTGGAACATTTTGTGTCGCAC  
R P R S I M V Y A P C K T A V

GAAGAAGAAGTAGCAGCAGTAGAAGAAGTAGTAGTAGAAGAAGAA 2790  
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E E E V A A V E E V V V E E E

Ssp I

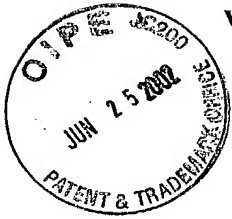
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CGAAGAACTGCATAGACCGTTATAACGTAGTCAGAACCGCCTTAA

Cla I

ACGATATACGCAGAGATGAAGTGCTGAACAAACATATGTAAAATC 2970  
TGCTATATGCGTCTCTACTTCACGACTTGTTTGTATACATTTTAG

GGGGGACCCCTTAGTTCT 3033  
CCCCCTGGGGAATCAAGA

Fig. 5 SHEET 12



WO 96/34968

PCT/GB96/01075

20/75

✓180 ✓190 ✓200 ✓210 ✓220  
IYEIDPLL TN YRQHLDYRYSQYKKLREAI DKYEGGLEAF SRGYEKM GFTR  
: : DP L. Y : H: . R : Y . : I: KYEG LE. F: : GY K. GF. R  
LLNL DPTLEPYLDHFRHRMKRYVDQKMLIEKYEGPLEEFAQGYLKFGFNR  
^100 ^110 ^120 ^130 ^140  
✓230 ✓240 ✓250 ✓260 ✓270  
SATGITYREWALGAQSAALIGDFNWDANADIMTRNEFGVWEIFLPNNVD  
... I. YREWA : AQ. A. : IGDFN. W: : : : M. : : : FGVW. I : P: VD  
EDGCIVYREWAPAAQEA EVIGDFNGWNGSNHMMEKDQFGVWSIRIPD-VD  
^150 ^160 ^170 ^180 ^190  
✓280 ✓290 ✓300 ✓310 ✓320  
GSPAIPHGSRVKIRMDTPSGV-KDSIPAWINYSLQLPDEI--PYNGIHYD  
: . P. IPH. SRVK: R. : : GV D. IPAWI: Y: . : : : PY: G: . D  
SKPVIPHNSRVKFRFKHNGVWVDRI PAWIKYATADATKFAAPYDGVYWD  
^200 ^210 ^220 ^230 ^240  
✓330 ✓340 ✓350 ✓360 ✓370  
PPEEERYIFQHPRPKPKSLRIYESHIGMSSPEPKINSYVNF RDEVLPRI  
PP . ERY F: . PRP KP: : RIYE: H: GMSS: EP: : NSY : F D: VLPRI  
PPPSERYHFKYPRPPKPRAPRIYEAHVGMSSSEPRVNSYREFADDVLPRI  
^250 ^260 ^270 ^280 ^290  
✓380 ✓390 ✓400 ✓410 ✓420  
KKLGYNALQIMAIQEHSYYASFGYHVTNFFAPSSRFGTPDDLKSLIDKAH  
K . YN: : Q: MAI EHSYY: SFGYHVTNFFA S: R: G. P: DLK LIDKAH  
KANNYNTVOLMAIMEHSYYGSFGYHVTNFFAVSNRYGNPEDLKYLIDKAH  
^300 ^310 ^320 ^330 ^340  
✓430 ✓440 ✓450 ✓460 ✓470  
ELGIVVLMDIVHSHASNNTLDGLNMFDC---TDSCYFHSGARGYHWMWDS  
. LG: VL: D: VHSHASN. DGLN FD : : : YFH: G. RGYH : WDS  
SLGLQVLVDVVHSHASNNTDGLNGFDIGQGSQESYFHAGERGYHKLWDS  
^350 ^360 ^370 ^380 ^390  
✓480 ✓490 ✓500 ✓510 ✓520  
RLFNYGNWEVLR YLLSNARWWLDAFKFDGFRFDGVTSMYIHHGLSVGFT  
RLFNY: NWEVLR: LLSN RWWL: . : : FDGFRFDG: TSM: Y: HHG: : : GFT  
RLFNYANWEVLRFLLSNLRWWLEENFDGFRFDGITSMLYVHHGINMGFT  
^400 ^410 ^420 ^430 ^440  
✓530 ✓540 ✓550 ✓560 ✓570  
GNYEEYFGLATD VDAVVYLM LVNDLIHGLFPDAITIGEDVSGMPTFCIPV  
GNY: EYF: ATD VDAVVYLM. N: LIH : FPDA. . I: EDVSGMP. : . PV  
GNYNEYFSEATD VDAVVYLM LANNLIHKIFPDATVIAEDVSGMPGLSRPV  
^450 ^460 ^470 ^480 ^490  
✓580 ✓590 ✓600 ✓610 ✓620  
OEGGVGFDYRLHMAIADKRIELK-KRDEDWRVGDIVHTLTNRRWSEKCV  
EGG: GFDYRL MAI: DK: I: LK K. DEDW. : : : : LTNRR. : EKC:  
SEGGIGFDYRLAMAI PDKWIDYLNKKNDEDSMKEVTSSLTNRRYTEKCI  
^500 ^510 ^520 ^530 ^540

Fig. 6 SHEET 1

SUBSTITUTE SHEET (RULE 26)

21/75



✓630      ✓640      ✓650      ✓660      ✓670  
 SYAESHDOALVGDKTIAFWLMDKDMYDFMALDRPSTSLIDRGIALHKMIR  
 : YAESHDO: : VGDKTIAF LMDK: MY. M: : : : : DRGIALHKMI:  
 AYAESHDOQSI VGDKTIAFL LMDKEMYSGMSCLTDASPVVDRGIALHKMIH  
 ^550      ^560      ^570      ^580      ^590  
 ✓680      ✓690      ✓700      ✓710      ✓720  
 LVTMGLGGEGYLNFMGNEFGHPEWIDFPRAEQHLSGGSVIPGNQFSYDKC  
 : TM: LGGEGYLNFMGNEFGHPEWIDFPR      GN: . SYDKC  
 FFTMALGGEGYLNFMGNEFGHPEWIDFPR-----EGNNWSYDKC  
 ^600      ^610      ^620      ^630  
 ✓730      ✓740      ✓750      ✓760      ✓770  
 RRRFDLGDAEYLRYRGLQEFDRPMQYLEDKYEFMTSEHQFISRKDEGDRM  
 RR: . : L: D: E. LRY: . : . FDR: M: L: : K: . F: : S. . Q: : S. . D: : : : :  
 RRQWNLADSEHLRYKFMNAFDRAMNSLDEKFSFLASGKQIVSSMDDDNKV  
 ^640      ^650      ^660      ^670      ^680  
 ✓780      ✓790      ✓800      ✓810      ✓820  
 IVFEKGNLVFVFNFWHTKSYSYDRIACLPKPKYKVALDSDDDLFGGFGRI  
 : VFE: G: LVFVFNFH . : : Y. : Y: : : C PGKY: VAL: SD. FGG GR  
 VVFERGDLVFNFNHPNNTYEGYKVGCDLPGKYRVALGSDAWFEGGHGRA  
 ^690      ^700      ^710      ^720      ^730  
 ✓830      ✓840      ✓850      ✓860  
 DHNAEYFT-----FEGWYDDRPRSIMVYAPCKTAVVYALVDKEEEEE  
 : H: . : . FT      E. : : : RP. S: . V : P : T V. Y VD. . E.  
 GHDVDHFTSPEGIPGVPETNFNGRPNSFKVLSPARTCVAYYRVDERMSET  
 ^740      ^750      ^760      ^770      ^780  
 ✓870  
 EEEEEEV  
 E: . : : :  
 EDYQTDI  
 ^790

Fig. 6 SHEET 2



22/75

10 20 30 40  
 M V Y T L S G V R F P T V P S V Y K S N G F S S N G D R R N A N V S V F L K K H -- S L S R K I L A  
 M V Y T : S G : R F P . : P S : . K S : . . D R R . : : S F L K : : S : S R . L  
 M V Y T I S G I R F P V L P S L H K S --- T L R C D R R A S S H S F F L K N N S S S F S R T S L Y  
 10 20 30 40  
 50 60 70 80 90  
 E K S S Y N S E F R P S T V A A S G K V L V P G T Q S D S S S S S T D Q F E T T E T S P E N S P A S  
 . K S : S E : : S T : A . S : K V L : P . . Q D : S S : D Q : E . . . : E : . .  
 A K F S R D S E T K S S T I A E S D K V L I P E D Q - D N S V S L A D Q L E N P D I T S E D A Q N L  
 50 60 70 80 90  
 100 110 120 130 140  
 T D V D S S T M E H A S Q I K T E N D D V E P S S D L T G S V E E L D F A S S L Q L Q E G G K L E E  
 . D : T M . : : : . : . : . : . : . : . : . : . : . : . : . : . : S : : : : : :  
 E D L --- T M K D G N K Y N I D - E S T S S Y R E V G D E K G S V T S S S L V D V N T D T Q -- A  
 100 110 120 130 140  
 150 160 170 180 190  
 S K T L N T S E E T I I D E S D R I R E R G I P P P G L G Q K I Y E I D P L L T N Y R Q H L D Y R Y  
 . K T S : . . : . : : I I P P P G G Q K I Y E I D P L L . . R Q H L D : R Y  
 K K T S V H S D K K V K V D K P K I --- I P P P G S G Q K I Y E I D P L L Q A H R Q H L D F R Y  
 150 160 170 180  
 200 210 220 230 240  
 S Q Y K K L R E A I D K Y E G G L E A F S R G Y E K M G F T R S A T G I T Y R E W A L G A Q S A A L  
 : Q Y K : : R E . I D K Y E G G L : A F S R G Y E K . G F T R S A T G I T Y R E W : G A : S A A L  
 G O Y K R I R E E I D K Y E G G L D A F S R G Y E K F G F T R S A T G I T Y R E W G P G A K S A A L  
 190 200 210 220 230  
 250 260 270 280 290  
 I G D F N N W D A N A D I M T R N E F G V W E I F L P N N V D G S P A I P H G S R V K I R M D T P S  
 : G D F N N W : : N A D : M T : : . F G V W E I F L P N N . D G S P : I P H G S R V K I : M D T P S  
 V G D F N N W N P N A D V M T K D A F G V W E I F L P N N A D G S P P I P H G S R V K I H M D T P S  
 240 250 260 270 280  
 300 310 320 330 340  
 G V K D S I P A W I N Y S L Q L P D E I P Y N G I H Y D P P E E E R Y I F Q H P R P K K P K S L R I  
 G : K D S I P A W I : : S : Q P : E I P Y N G I . Y D P P E E E : Y : F : H P : P K : P : S : R I  
 G I K D S I P A W I K F S V Q A P G E I P Y N G I Y Y D P P E E E K Y V F K H P Q P K R P Q S I R I  
 290 300 310 320 330  
 350 360 370 380 390  
 Y E S H I G M S S P E P K I N S Y V N F R D E V L P R I K K L G Y N A L Q I M A I Q E H S Y Y A S F  
 Y E S H I G M S S P E P K I N : Y . N F R D : V L P R I K K L G Y N A : Q I M A I Q E H S Y Y A S F  
 Y E S H I G M S S P E P K I N T Y A N F R D D V L P R I K K L G Y N A V Q I M A I Q E H S Y Y A S F  
 340 350 360 370 380  
 400 410 420 430 440  
 G Y H V T N F F A P S S R F G T P D D L K S L I D K A H E L G I V V L M D I V H S H A S N N T L D G  
 G Y H V T N F F A P S S R F G T P : D L K S L I D : A H E L G : : V L M D I V H S H : S N N T L D G  
 G Y H V T N F F A P S S R F G T P E D L K S L I D R A H E L G L L V L M D I V H S H S S N N T L D G  
 390 400 410 420 430

Fig. 7 SHEET 1

**SUBSTITUTE SHEET (RULE 26)**

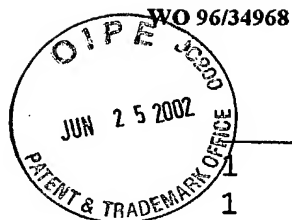
23/75



↙450 ↙460 ↙470 ↙480 ↙490  
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 LNMFD TD: YFH: G: RGYHWMWDSRLFNNG: WEVLRVLLSNARWWLD. :  
 LNMFDGTDGHYFHPGSRGYHWMWDSRLFNNGSWEVLRVLLSNARWWLDEY  
 ^440 ^450 ^460 ^470 ^480  
 ↙500 ↙510 ↙520 ↙530 ↙540  
 KFDGFRFDGVTSMYIHHGLSVGFTGNYYEYFGLATDVDAVVYMLVNDL  
 KFDGFRFDGVTSMY. HHGL V: FTGNY. EYFGLATDV: AVVY: MLVNDL  
 KFDGFRFDGVTSMYTHHGLQVSFTGNYYEYFGLATDVEAVVYMLVNDL  
 ^490 ^500 ^510 ^520 ^530  
 ↙550 ↙560 ↙570 ↙580 ↙590  
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 IHGLFP: A: : IGEDVSGMPTFC: P. Q: GG: GF: YRLHMA: ADK: IELLKK  
 IHGLFPEAVSIGEDVSGMPTFCLPTQDGGIGFNRYRLHMAVADKWIELLKK  
 ^540 ^550 ^560 ^570 ^580  
 ↙600 ↙610 ↙620 ↙630 ↙640  
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 : DEDWR: GDIVHTLTNRRW EKC V YAESHQALVGDKT: AFWLMDKDMY  
 QDEDWRMGDIVHTLTNRRWLEKCVSYAESHDQALVGDKTLAFWLMDKDMY  
 ^590 ^600 ^610 ^620 ^630  
 ↙650 ↙660 ↙670 ↙680 ↙690  
 DFMALDRPSTSLIDRGIALHKMIRLVTMGLGGEGYLNFMGNEFGHPEWID  
 DFMALDRPST: LIDRGIALHKMIRL: TMGLGGEGYLNFMGNEFGHPEWID  
 DFMALDRPSTPLIDRGIALHKMIRLITMGLGGEGYLNFMGNEFGHPEWID  
 ^640 ^650 ^660 ^670 ^680  
 ↙700 ↙710 ↙720 ↙730 ↙740  
 FPRAEQHLSGGSVIPGNQFSYDKCRRRFDLGD AEYLRYRGLQEFDRPMQY  
 FPR: EQHL: : G: : PGN: SYDKCRRRFDLGD: YLRY: G: QEFDR: MQ.  
 FPRGEQHLPGKIVPGNNNSYDKCRRRFDLGDADYLR YHGMQEFDRAMQH  
 ^690 ^700 ^710 ^720 ^730  
 ↙750 ↙760 ↙770 ↙780 ↙790  
 LEDKYEFTSEHQFISRKDEGDRMIVFEKGNLVFVFNHFWTKSYSDYRIA  
 LE: . Y. FMTSEHQ: ISRK: EGDR: I: FE: : NLVFNHFWT: SYSDY: :  
 LEETYGFMTSEHQYISRKNEGDRVIFERDNLVFNHFWTNSYSDYKVG  
 ^740 ^750 ^760 ^770 ^780  
 ↙800 ↙810 ↙820 ↙830 ↙840  
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 CLKPGKYKIVLSDDTLFGGFNRLNHTAEYFTSEGWYDDRPRSFLVYAPS  
 ^790 ^800 ^810 ^820 ^830  
 ↙850 ↙860 ↙870  
 KTAVVYALVDKEEEEEEEEEEEVAA  
 : TAVVYAL. D E. E E. : . V. :  
 RTAVVYALADGVESEPIELSDGVES  
 ^840 ^850 ^860

Fig. 7 SHEET 2

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

24 / 75

1 -----TTG--AT-----  
1 -----TTGA-----  
1 -----GA-----  
45 **AAAAACCTCCTCCACTCAGTCTTGGAATCTCTCTCTCT**  
  
72 TTTCTCTTAATTCCAACCA**GGG**GAATGAATAAAAGGAT-A  
73 TTTCTCTTAATTCCAACCAAGG-AATGAATAAAAGGAT-A  
71 TTTCTCTTAATTCCAACCAAGG-AATGAATAAA**A**AGAT-A  
165 TTTCTCTTAATTCCAACCAAGG-AATGAAT**IAAA**AGAT**IA**  
  
191 TGTACAAATCTAATGGATTCAGCAGTAATGGTGATCGGAG  
191 TGTACAAATCTAATGGATTCAGCAGTAATGGTGATCGGAG  
189 TGTACAAATCTAATGGATTCAGCAGTAATGGTGATCGGAG  
274 TGTACAAATCTAATGGATTCAGCAGTAATGGTGATCGGAG  
  
311 AATCCGACCTTCTACAGTTGCAGCATCGGGGAAAGTCCT  
311 AATCCGACCTTCTACAGTTGCAGCATCGGGGAAAGTCCT  
309 AAT**C**CCGACCTTCTACA**A**TTGCAGCATCGGGGAAAGTCCT  
394 AAT**C**CCGACCTTCTACAGTTGCAGCATCGGGGAAAGTCCT  
  
431 CAGCATCAACTGATGTAGATAGTTCAACAATGGAACACGC  
431 CAGCATCAACTGATGTAGATAGTTCAACAATGGAACACGC  
429 CAGCATCAACTGATGTAGATAGTTCAACAATGGAACACGC  
514 CAGCATCAACTGATGT**C**GATAGTTCAACAATGGAACACGC  
  
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549 CATCACTACAAC**T**ACAAGAAGGTGGTAAACTGGAGGAGTC  
634 CATCACTACAAC**T**ACAAGAAGGTGGTAAACTGGAGGAGTC  
  
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671 TTGGTCAGAAGATTTATGAAATAGACCCCTTTTGACAAA  
669 TTGGTCAGAAGATTTATGAAATAGACCCCTTTTGACAAA  
754 TTGGTCAGAAGATTTATGAAATAGACCCCTTTTGACAAA  
  
791 AAG**C**TTTTCTCGTGGTTATGAAAAAATGGGTTTCACTCG  
791 AAG**C**TTTTCTCGTGGTTATGAAAAAATGGGTTTCACTCG  
789 AAGCTTTTTCTCGTGGTTATGAAA**G**AATGGGTTTCACTCG  
874 AAGCTTTTTCTCGTGGTTATGAAAAAATGGGTTTCACTCG

Fig.8  
Sheet 2

Fig.8 SHEET 1

SUBSTITUTE SHEET (RULE 26)



25/75



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-----TGGGGCCTTGAACCTCAGCAATTTGACACTCAGTTAGTTAC  
-----TGGGGCCTTGAACCTCAGCAATTTGACACTCAGTTAGTTAC  
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TGTGCCTGGAA**CC**CAGAGTGATAGCTCCTCATCCTCAACAGACCAATTTGAG  
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TGT**AT**CCTGGAA**CC**CAGAGTGATAGCTCCTCATCCTCAACAGACCAATTTGAG

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Fig. 8  
Sheet  
3

Fig. 8 SHEET 2

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

26/75

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Fig. 8  
SHEET 3

SUBSTITUTE SHEET (RULE 26)

27/75



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1473 GACGACCTTAAGTCTTTGATTGATAAAGCTCATGAGCTAGG

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1593 GATAGTTGTTACTTTCACTCTGGAGCTCGTGGTTATCATTG

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Fig. 8  
Sheet 5

Fig. 8  
SHEET 4

28/75



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TCATGGGCTTTTCCCAGATGCAATTACCATTGGTGAAGATGTTAGC  
TCATGGGCTTTTCCCAGATGCAATTACCATTGGTGAAGATGTTAGC

Fig. 8  
Sheet 6

Fig. 8  
SHEET 5

SUBSTITUTE SHEET (RULE 26)



29/75

CTCATGGGTCCAGAGTGAAGATACGTATGGACA 11con.seq  
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Fig. 8  
SHEET 6



30/75

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1989 AGATGGTCGGAAAAGTGTGTTTCATACGCTGAAAGTCATGA  
2073 AGATGGTCGGAAAAGTGTGTTTCATACGCTGAAAGTCATGA

2108 CCGCAACATCATTAAATAGATCGTGGGATAGCATTGCACAA  
2110 CCGTCAACATCATTAAATAGATCGTGGGATAGCATTGCACAA  
2109 CCGTCAACATCATTAAATAGATCGTGGGATAGCATTGCACAA  
2193 CCGTCAACATCATTAAATAGATCGTGGGATAGCATTGCACAA

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2229 TGGATTGATTTCCCTAGGGCTGAACAACACCTCTCTGATGG  
2313 TGGATTGATTTCCCTAGGGCTGAACAACACCTCTCTGATGG

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2350 TACCGTGGGTTGCAAGAATTTGACCGGCTATGCAGTATCT  
2349 TACCGTGGGTTGCAAGAATTTGACCGGGCTATGCAGTATCT  
2433 TACCGTGGGTTGCAAGAATTTGACCGGGCTATGCAGTATCT

2468 GAAAGAGGAAACCTAGTTTTGTCTTTAATTTTCACTGGAC  
2470 GAAAAAGGAAACCTAGTTTTGTCTTTAATTTTCACTGGAC  
2469 GAAAAAGGAAACCTAGTTTTGTCTTTAATTTTCACTGGAC  
2553 GAAAAAGGAAACCTAGTTTTGTCTTTAATTTTCACTGGAC

2588 TTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAATATTT  
2590 TTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAATATTT  
2589 TTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAATATTT  
2673 TTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAATGTTT

2708 CTAGTAGACAAACTAGAAG-----  
2710 CTAGTAGACAAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA  
2709 CTAGTAGACAAAGAAGAAGAAGAAGAAGAAGAAGAAGA  
2793 CTAGTAGACAAAGAAGAAGAAGAAGAAGAAGAAGAAGA

Fig.8  
Sheet 8

Fig.8  
SHEET 7



WO 96/34968

PCT/GB96/01075

31/75

TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA  
TGATAAA[ ]GGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA  
TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA  
TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA

TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC  
TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC  
TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC  
TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC

GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA  
GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA  
GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA  
GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA

CTCAGTAATTC[ ]CCCGGAAACCAATTCAGTTATGATAAATGCAGACGG  
CTCAGTAATTC[ ]CCCGGAAACCAATTCAGTTATGATAAATGCAGACGG  
CTCAGTAATTC[ ]CCCGGAAACCAATTCAGTTATGATAAATGCAGACGG  
CTCAGTAATTC[ ]CCCGGAAACCAATTCAGTTATGATAAATGCAGACGG

TGAAGATAAATATGAGTTTATGACTTCAGAACACCAAGTTCATATCA  
TGAAGATAAATATGAGTTTATGACTTCAGAACACCAAGTTCATATCA  
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TGAAGATAAATATGAGTTTATGACTTCAGAACACCAAGTTCATATCA

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AAAAAGCTATTCAGACTATCGCATAG[ ]CTGCCTGAAGCCTGGAAAA  
AAAA[ ]GCTATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAAA  
AAAAAGCTATTCAGACTATCGCATAGGCT[ ]CTGAAGCCTGGAAAA

CACCT[ ]TGAAGGAT[ ]GTATGATGATCGTCCT[ ]GTTCAATTATGGTG  
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CACCTTTGAAGGATGGTATGATGATCGTCCTCGTTCAATTATGGTG  
CACCTTTGAAGGATGGTATGATGATCGTCCTCGTTCAATTATGGTG

-----TAGCAGTAGTAGAAGA[ ]CCCAT[ ]G-----AAGAATGAACG  
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-----TAGCAGTAGTAGAAGAAGTAGTAGTAGAAGAAGAATGAACG  
-----TAGCAGTAGTAGAAGAAGTAGTAGTAGAAGAAGAATGAACG

Fig. 8  
Sheet 9

Fig. 8  
SHEET 8

32/75



GTGGGTGATATTGTTTCATACACTGACAAATAGA 11con.seq  
GTGGGTGATATTGTTTCATACACTGACAAATAGA 19con.seq  
GTGGGTGATATTGTTTCATACACTGACAAATAGA 10con.seq  
GTGGGTGATATTGTTTCATACACTGACAAATAGA psbe2con.seq

AAGGATATGTATGATTTTATGGCTCTGGATAGA 11con.seq  
AAGGATATGTATGATTTTATGGCTCTGGATAGA 19con.seq  
AAGGATATGTATGATTTTATGGCTCTGGATAGA 10con.seq  
AAGGATATGTATGATTTTATGGCTCTGGATAGA psbe2con.seq

AATTTTCATGGGAAATGAATTCGGCCACCCTGAG 11con.seq  
AATTTTCATGGGAAATGAATTCGGCCACCCTGAG 19con.seq  
AATTTTCATGGGAAATGAATTCGGCCACCCTGAG 10con.seq  
AATTTTCATGGGAAATGAATTCGGCCACCCTGAG psbe2con.seq

AGATTTGACCTGGGAGATGCAGAATATTTAAGA 11con.seq  
AGATTTGACCTGGGAGATGCAGAATATTTAAGA 19con.seq  
AGATTTGACCTGGGAGATGCAGAATATTTAAGA 10con.seq  
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CGAAAGGATGAAGGAGATAGGATGATTGTATTT 19con.seq  
CGAAAGGATGAAGGAGATAGGATGATTGTATTT 10con.seq  
CGAAAGGATGAAGGAGATAGGATGATTGTATTT psbe2con.seq

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TACAAGGTTGCTTGGACTCAGATGATCCACTT 19con.seq  
TACAAGGTTGCTTGGACTCAGATGATCCACTT 10con.seq  
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TATGCACCTAGTAGAACAGCAGTGGTCTATGCA 19con.seq  
TATGCACCTAGTAGAACAGCAGTGGTCTATGCA 10con.seq  
TATGCACCTAGTAGAACAGCAGTGGTCTATGCA psbe2con.seq

AACTTGTGATCGCGTTGAAAGATTTGAACGTTA 11con.seq  
AACTTGTGATCGCGTTGAAAGATTTGAACG--- 19con.seq  
AACTTGTGATCGCGTTGAAAGATTTGAACG--- 10con.seq  
AACTTGTGATCGCGTTGAAAGATTTGAACG--- psbe2con.seq

Fig. 8  
SHEET 9





2795 CTTGGTCATCCACATAGAGCTTCTTGAC-----  
2827 -----CTACATAGAGCTTCTTGACGTATCTGGCAATAT  
2814 -----CCACATAGAGCTTCTTGACGTATCTGGCAATAT  
2895 -----CTACATAGAGCTTCTTGACGTATCTGGCAATAT

2898 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA  
2937 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA  
2924 AGAGATGAAGTGCTGAACAAA**AA**CATATGTAAAATCGATGAA  
3005 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA

Fig. 8  
Sheet 11

3123 **GCCCACTAGAAATCAATTATGTGAGACCTAAAAACAATAAC**

Fig. 8 SHEET 10



34/75

---ATCAGTCTTGGCGGAATTTCATGTGACAAAGGTTTGCACTT  
TGCATCAGTCTTGGCGGAATTTTCATGTGACAC-AAGGTTTGCAATT  
TGCATTAGTCTTGGCGGAATTTTCATGTGACAA-CAGGTTTGCAATT  
TGCATCAGTCTTGGCGGAATTTTCATGTGACAA-AAGGTTTGCAATT

TTTATGTGGAATGCTGGGACGATCGAATTCCTGCAGCC  
TTTATGTGGAATGCTGGGACGATCGAATTCCTGCAG  
TTTATGTGGAATGCTGGGACGATCGAATTCCTGCAGCC  
TTTATGTGGAATGCTGGGACGGCTTCAGCAGCTTTTGCTTAGTGA

CATAAAATGGAAATAGTGCTGATCTAATGATGTTTAAANCCNNNNA

Fig. 8  
Sheet 12

Fig. 8 SHEET 11



35/75

CTTTCCACTATTAGTAGT**CCAC**CGATATACGC 11con.seq  
CTTTCCACTATTAGTAGTGCAACGATATACGC 19con.seq  
CTTTCCACTATTAGTAGTGCAACGATATACGC 10con.seq  
CTTTCCACTATTAGTAGTGCAACGATATACGC psbe2con.seq

11con.seq

19con.seq

10con.seq

**GTTCTGTAAATTGTCATCTCTTTANATGTACA** psbe2con.seq

11con.seq

19con.seq

10con.seq

**AAAAAAAAAAAAAACTCGAG**

psbe2con.seq

Fig. 8 SHEET 12

36/75



GGATGCTAATGTTTCTGTATTCTTGAAAAAGCACTCTCTTTCACGG  
CCTACGATTACAAAGACATAAGAACTTTTTCTGTGAGAGAAAGTGCC

A N V S V F L K K H S L S R

TTCTACAGTTGCAGCATCGGGGAAAGTCCTTGTGCCTGGAAYCCAG  
AAGATGTCAACGTCGTAGCCCCTTTCAGGAACACGGACCTTRGGTC

S T V A A S G K V L V P G ? Q

GACATCTCCAGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA  
CTGTAGAGGTCTTTTAAGGGGTCGTAGTTGACTACATCTATCAAGT

T S P E N S P A S T D V D S S

TGAGCCGTCAAGTGATCTTACAGGAAGTGTTGAAGAGCTGGATTTT  
ACTCGGCAGTTCACTAGAATGTCCTTCACAACTTCTCGACCTAAAA

E P S S D L T G S V E E L D F

TAAAACATTAAATACTTCTGAAGAGACAATTATTGATGAATCTGAT  
ATTTTGTAATTTATGAAGACTTCTCTGTTAATAACTACTTAGACTA

K T L N T S E E T I I D E S D

Hinc II

GATTTATGAAATAGACCCCCTTTTGACAAACTATCGTCAACACCTT  
CTAAATACTTTATCTGGGGGAAAAGTGGTTGATAGCAGTTGTGGAA

I Y E I D P L L T N Y R Q H L

Fig.9  
Sheet  
2

Fig.9 SHEET 1

37/75

.Bgl II

AAGATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATCCCGACC  
TTCTAGAACCGACTTTTTCAGAAGAATGTTAAGGCTTAGGGCTGG  
K I L A E K S S Y N S E S R P  
AGTGATAGCTCCTCATCCTCAACAGACCAATTTGAGTTCACTGA  
TCACTATCGAGGAGTAGGAGTTGTCTGGTTAAACTCAAGTGACT  
S D S S S S S T D Q F E F T E  
ACAATGGAACACGCTAGCCAGATTAAAACTGAGAACGATGACGT  
TGTTACCTTGTGCGATCGGTCTAATTTTGACTCTTGCTACTGCA  
T M E H A S Q I K T E N D D V  
GCTTCATCACTACAACACTACAAGAAGGTGGTAAACTGGAGGAGTC  
CGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACCTCCTCAG  
A S S L Q L Q E G G K L E E S  
AGGATCAGAGAGAGGGGCATCCCTCCACCTGGACTTGGTCAGAA  
TCCTAGTCTCTCTCCCGTAGGGAGGTGGACCTGAACCAGTCTT  
R I R E R G I P P P G L G Q K  
GATTACAGGTATTCACAGTACAAGAACTGAGGGAGGCAATTGA  
CTAATGTCCATAAGTGTCATGTTCTTTGACTCCCTCCGTTAACT  
D Y R Y S Q Y K K L R E A I D

Fig. 9 SHEET 2

38/75

Hind III

CAAGTATGAGGGTGGTTTGGAAAGCTTTTTCTCGTGGTTATGAAAAA  
GTTCATACTCCCAACAACTTCGAAAAAGAGCACCAATACTTTTT  
K Y E G G L E A F S R G Y E K

Pvu II

GGCTCCTGGTGCCAGTCAGCTGCCCTCATTGGAGATTTCAACAAT  
CCGAGGACCACGGGTCAGTCGACGGGAGTAACCTCTAAAGTTGTTA  
A P G A Q S A A L I G D F N N

CTGGGAGATTTTTCTGCCAAATAATGTGGATGGTTCTCCTGCAATT  
GACCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGACGTTAA  
W E I F L P N N V D G S P A I

TGTTAAGGATTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT  
ACAATTCCTAAGGTAAGGACGAACCTAGTTGATGAGAAATGTCGAA  
V K D S I P A W I N Y S L Q L

AGAGGAGAGGTATRTCTTCCAACACCCACGGCCAAAGAAACCAAAG  
TCTCCTCTCCATAYAGAAGGTTGTGGGTGCCGGTTTCTTTGGTTTC  
E E R Y ? F Q H P R P K K P K

Fig.9  
Sheet  
4

Fig.9 SHEET 3



ATGGGTTTTCACCTCGTAGTGCTACAGGTATCACTTACCGTGAGTG 630  
TACCCAAAGTGAGCATCACGATGTCCATAGTGAATGGCACTCAC  
M G F T R S A T G I T Y R E W

TGGGACGCAAATGCTGACATTATGACTCGGAATGAATTTGGTGT 720  
ACCCCTGCGTTTACGACTGTAATACTGAGCCTTACTTAAACCACA  
W D A N A D I M T R N E F G V

CCTCATGGGTCCAGAGTGAAGATACGYATGGACACTCCATCAGG 810  
GGAGTACCCAGGTCTCACTTCTATGCRTACCTGTGAGGTAGTCC  
P H G S R V K I R M D T P S G

CCTGATGAAATTCCATATAATGGAATATATTATGATCCACCCGA 900  
GGACTACTTTAAGGTATATTACCTTATATAATACTAGGTGGGCT  
P D E I P Y N G I Y Y D P P E

TCGCTGAGAATATATGAATCTCATATTGGAATGAGTAGTCCGGA 990  
AGCGACTCTTATATACTTAGAGTATAACCTTACTCATCAGGCCT  
S L R I Y E S H I G M S S P E

Fig. 9 SHEET 4



40/75

Xmn I

GCCTAAAATTAAC TCATACGTGAATTTTAGAGATGAAGTTCTTCCT  
CGGATTTTAATTGAGTATGCACTTAAAATCTCTACTTCAAGAAGGA  
P K I N S Y V N F R D E V L P

TCAAGAGCATTCTTATTATGCTAGTTTTGGTTATCATGTCACAAAT  
AGTTCTCGTAAGAATAATACGATCAAAACCAATAGTACAGTGTTTA  
Q E H S Y Y A S F G Y H V T N

GTCTTTGATTGATAAAGCTCATGAGCTAGGAATTGTTGTTCTCATG  
CAGAACTAACTATTTTCGAGTACTCGATCCTTAACAACAAGAGTAC  
S L I D K A H E L G I V V L M

GAACATGTTTGACGGCACAGATAGTTGTTACTTTCACTCTGGAGCT  
CTTGTAACAACTGCCGTGTCTATCAACAATGAAAGTGAGACCTCGA  
N M F D G T D S C Y F H S G A

AAACTGGGAGGTACTTAGGTATCTTCTCTCAAATGCGAGATGGTGG  
TTTGACCCTCCATGAATCCATAGAAGAGAGTTTACGCTCTACCACC  
N W E V L R Y L L S N A R W W

ATCAATGATGTATACTCACCACGGATTATCGGTGGGATTCACTGGG  
TAGTTACTACATATGAGTGGTGCCTAATAGCCACCCTAAGTGACCC  
S M M Y T H H G L S V G F T G

Fig.9  
Sheet  
6

Fig.9 SHEET 5

SUBSTITUTE SHEET (RULE 26)





41/75

CGCATAAAAAASCTTGGGTACAATGCGGTGCAAATTATGGCTAT 1080  
GCGTATTTTTTSGAACCCATGTTACGCCACGTTTAATACCGATA  
R I K ? L G Y N A V Q I M A I

TTTTTTGCACCAAGCAGCCGTTTTGGAACGCCCGACGACCTTAA 1170  
AAAAAACGTGGTTCGTTCGGCAAACCTTGCGGGCTGCTGGAATT  
F F A P S S R F G T P D D L K

GACATTGTTACAGCCATGCATCAAATAATACTTTAGATGGACT 1260  
CTGTAACAAGTGTTCGGTACGTAGTTTATTATGAAATCTACCTGA  
D I V H S H A S N N T L D G L

Sac I

CGTGGTTATCATTGGATGTGGGATTCCCGCCTCTTTAACTATGG 1350  
GCACCAATAGTAACCTACACCCTAAGGGCGGAGAAATTGATACC  
R G Y H W M W D S R L F N Y G

TTGGATGAGTTCAAATTTGATGGATTTAGATTTGATGGTGTGAC 1440  
AACCTACTCAAGTTTAAACTACCTAAATCTAAACTACCACTG  
L D E F K F D G F R F D G V T

AACTACGAGGAATACTTTGGACTCGCAACTGATGTGGATGCTGT 1530  
TTGATGCTCCTTATGAAACCTGAGCGTTGACTACACCTACGACA  
N Y E E Y F G L A T D V D A V

Fig. 9 SHEET 6

SUBSTITUTE SHEET (RULE 26)

42/75



Hinc II

TGTGTATCTGATGCTGGTCAACGATCTTATTCACGGGCTTTTCCCA  
ACACATAGACTACGACCAGTTGCTAGAATAAGTGCCCGAAAAGGGT  
V Y L M L V N D L I H G L F P

TTGTATTCCCGTTCAAGATGGGGGTGTTGGCTTTGACTATCGGCTG  
AACATAAGGGCAAGTTCTACCCCCACAACCGAAACTGATAGCCGAC  
C I P V Q D G G V G F D Y R L

GGATGAGGATTGGAGAGTGGGTGATATTGTTTCATACACTGACAAAT  
CCTACTCCTAACCTCTCACCCACTATAACAAGTATGTGACTGTTTA  
D E D W R V G D I V H T L T N

TCAAGCTCTAGTCGGTGATAAACTATAGCATYCTGGCTGATGGAC  
AGTTTCGAGATCAGCCACTATTTTGATATCGTARGACCGACTACCTG  
Q A L V G D K T I A ? W L M D

ATTAATAGATCGTGGGATAGCATTGCACAAGATGATTAGGCTTGTA  
TAATTATCTAGCACCTATCGTAACGTGTTCTACTAATCCGAACAT  
L I D R G I A L H K M I R L V

Fig.9  
Sheet  
8

Fig. 9 SHEET 7

SUBSTITUTE SHEET (RULE 26)



43/75

GATGCAATTACCATTGGTGAAGATGTTAGCGGAATGCCGACATT  
CTACGTTAATGGTAACCACTTCTACAATCGCCTTACGGCTGTAA  
D A I T I G E D V S G M P T F

Nde I

CATATGGCAATTGCTGATAAATGGATTGAGTTGCTCAAGAAACG  
GTATACCGTTAACGACTATTTACCTAACTCAACGAGTTCTTTGC  
H M A I A D K W I E L L K K R

AGAAGATGGTCGGAAAAGTGTGTTTCATMCGCTGAAAGTCATGA  
TCTTCTACCAGCCTTTTCACACAAAGTAKGCGACTTTCAGTACT  
R R W S E K C V S ? A E S H D

Hinc II

AAGGATATGTATGATTTTATGGCTCTGGATAGACCGTCAACATC  
TTCCTATACATACTAAAATACCGAGACCTATCTGGCAGTTGTAG  
K D M Y D F M A L D R P S T S

Asp 718  
Kpn I

ACTATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATGGGAAA  
TGATACCCTAATCCTCCTCTTCCCATGGATTAAAGTACCCTTT  
T M G L G G E G Y L N F M G N

Fig. 9 SHEET 8

44/75



EcoR I

TGAATTCGGCCACCCTGAGTGGATTGATTTCCCTAGGGCTGARCAA  
 ACTTAAGCCGGTGGGACTCACCTAACTAAAGGGATCCCGACTYGT  
 E F G H P E W I D F P R A E O

Ssp I

TGATAAATGCAGACGGAGATTTGACCTGGGAGATGCAGAATATTTA  
 ACTATTTACGTCTGCCTCTAACTGGACCCTCTACGTCTTATAAAT  
 D K C R R R F D L G D A E Y L

TGAAGATAAATATGAGTTTATGACTTCAGAACACCAGTTCATATCA  
 ACTTCTATTTATACTCAAATACTGAAGTCTTGTGGTCAAGTATAGT  
 E D K Y E F M T S E H Q F I S

CCTAGTTTTTGTCTTTAATTTTCACTGGACAAATAGCTATTCAGAC  
 GGATCAAAAACAGAAATTAAGTGACCTGTTTATCGATAAGTCTG  
 L V F V F N F H W T N S Y S D

GGACTCAGATGATCCACTTTTTTGGTGGCTTCGGGAGAATTGATCAT  
 CCTGAGTCTACTAGGTGAAAAACCACCGAAGCCCTCTTAAGTAGTA  
 D S D D P L F G G F G R I D H

YCGYYCAATTATGGTGTATGCACCTAGTAGAACAGCAGTGGTCTAT  
 RGCRRGTTAATACCACATACGTGGATCATCTTGTCTCGTCACCAGATA  
 R ? I M V Y A P S R T A V V Y

NGAAGAATTTT  
 NCTTCTTAAAA  
 E E F

2531

Fig 9  
Sheet  
10

Fig 9 SHEET 9

SUBSTITUTE SHEET (RULE 26)



45/75

CACCTCTCTGATGGCTCAGTAATTCCCGGAAACCAATTCAGTTA  
GTGGAGAGACTACCGAGTCATTAAGGGCCTTTGGTTAAGTCAAT 2070  
H L S D G S V I P G N Q F S Y

Nco I

AGATACCATGGGTTGCAAGAATTTGACCGGGCTATGCAGTATCT  
TCTATGGTACCCAACGTTCTTAAACTGGCCCGATACGTCATAGA 2160  
R Y H G L Q E F D R A M Q Y L

CGAAAGGATGAAGGAGATAGGATGATTGTATTTGAAARAGGAAA  
GCTTTCCTACTTCCTCTATCCTACTAACATAAACTTTYTCCTTT 2250  
R K D E G D R M I V F E ? G N

TATCGCATAGGCTGCCTGAAGCCTGGAAAATACAAGGTTGGCTT  
ATAGCGTATCCGACGGACTTCGGACCTTTTATGTTCCAACCGAA 2340  
Y R I G C L K P G K Y K V G L

Ssp I

AATGCCGAATATTTACCTCTGAAGGATCGTATGATGATCGYCC  
TTACGGCTTATAAAGTGGAGACTTCCTAGCATACTACTAGCRGG 2430  
N A E Y F T S E G S Y D D R P

GCACTAGTAGACAAANTAGAAGNAGAAGAAGAAGAANCCGN  
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Fig. 9 SHEET 10

SUBSTITUTE SHEET (RULE 26)

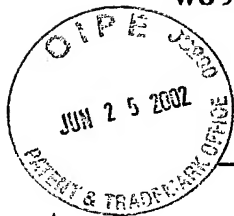


46/75

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1		TTGATGGG CCTTGA ACTCAGCAATTTGACACTCAGT		
1		TTGATGGG CCTTGA ACTCAGCAATTTGACACTCAGT		
1		T-		
1		-		
		80	90	100
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70		TTTTTCTCTTAATTCCAACCAAGGGAATGAATAAAAG		
71		TTTTTCTCTTAATTCCAACCAAGG-AATGAATAAAAG		
7		-AAGAG		
1		-		
		150	160	170
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140		GAAAGATGGTGTATATACTCTCTGGAGTTCGTTTTCC		
140		GAAAGATGGTGTATACACTCTCTGGAGTTCGTTTTCC		
33		-TCT		
1		-		
		220	230	240
208		CAGCAGTAATGGTGATCGGAGGAATGCTAATATTTCT		
210		CAGCAGTAATGGTGATCGGAGGAATGCTAATGTTTCT		
210		CAGCAGTAATGGTGATCGGAGGAATGCTAATGTTTCT		
48		CA		
1		-GGATGCTAATGTTTCT		
		290	300	310 *
278		ATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATCC		
280		ATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATTCC		
280		ATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATTCC		
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Fig.10  
Sheet 2

Fig. 10 SHEET 1

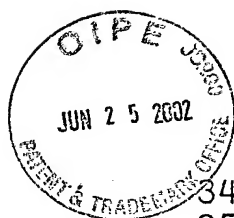


47/75

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TAGTTACACTCCTATCACTTATCAGATCTCTAT	19con. seq			
-----CATTA-----	86CON. SEQ			
-----	pcrsbe2con. seq			
110	120	130	140	
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GATAGATTTGTAAAAACCCTAAGGAGAGAAGAA	11con. seq			
GATAGATTTGTAAAAACCCTAAGGAGAGAAGAA	19con. seq			
GAGAAATT-----AACTATGAGAGGA-----	86CON. SEQ			
-----	pcrsbe2con. seq			
180	190	200	210	
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TACTGTTCCATCAGTGTACAAATCTAATGGATT	11con. seq			
TACTGTTCCATCAGTGTACAAATCTAATGGATT	19con. seq			
CACCAT--CACCA-----T	86CON. SEQ			
-----	pcrsbe2con. seq			
250	260	270	280	
GTATTCTTGAAAAAACACTCTCTTTACGGAAG	10con. seq			
GTATTCTTGAAAAAGCACTCTCTTTACGGAAG	11con. seq			
GTATTCTTGAAAAAGCACTCTCTTTACGGAAG	19con. seq			
-----CATGG--G	86CON. SEQ			
GTATTCTTGAAAAAGCACTCTCTTTACGGAAG	pcrsbe2con. seq			
320	330	340	350	
GACCTTCTACAATTGCAGCATCGGGGAAAGTCC	10con. seq			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	11con. seq			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	19con. seq			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	86CON. SEQ			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	pcrsbe2con. seq			

Fig. 10 SHEET 2

48/75

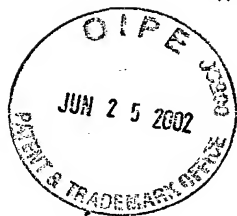


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127	TTGTGCCTGGAA	CCAGAGTGATAGCTCCTCATCCTC	
120	TTGTGCCTGGAA	TCAGAGTGATAGCTCCTCATCCTC	
	430	440	450
418	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
420	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
420	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
197	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
190	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
	500	510	520
488	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
490	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
490	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
267	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
260	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
	570	580	590
558	AAC TACAAGAAGGTGGTAAACTGGAGGAGTCTAAAAC		
560	AAC TACAAGAAGGTGGTAAACTGGAGGAGTCTAAAAC		
560	AAC TACAAGAAGGTGGTAAACTGGAGGAGTCTAAAAC		
337	AAC TACAAGAAGGTGGTAAACTGGAGGAGTCTAAAAC		
330	AAC TACAAGAAGGTGGTAAACTGGAGGAGTCTAAAAC		
	640	650	660
628	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
630	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
630	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
407	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
400	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		

Fig.10  
Sheet 4

Fig.10 SHEET 3





49/75

390	400	410	420	
AACAGAT	CAATTTGAGTTC	GCTGAGACATCTCC		10con. seq
AACAGACCAATTTGAGTTC	ACTGAGACATCTCC			11con. seq
AACAGACCAATTTGAGTTC	ACTGAGACATCTCC			19con. seq
AACA	ACCAATTTGAGTTC	ACTGAGACATCTCC		86CON. SEQ
AACAGACCAATTTGAGTTC	ACTGAGACATCTCC			pcrsbe2con. seq
460	470	480	490	
ACAATGGAACACGCTAGCCAGATTAAAACTGAG				10con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG				11con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG				19con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG				86CON. SEQ
ACAATGGAACACGCTAGCCAGATTAAAACTGAG				pcrsbe2con. seq
530	540	550	560	
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC				10con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC				11con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC				19con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC				86CON. SEQ
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC				pcrsbe2con. seq
600	610	620	630	
ATTAAATACTTCTGAAGAGACAATTATTGATGA				10con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA				11con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA				19con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA				86CON. SEQ
ATTAAATACTTCTGAAGAGACAATTATTGATGA				pcrsbe2con. seq
670	680	690	700	
GGACTTGGTCAGAAGATTTATGAAATAGACCCC				10con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC				11con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC				19con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC				86CON. SEQ
GGACTTGGTCAGAAGATTTATGAAATAGACCCC				pcrsbe2con. seq

Fig.10 SHEET 4



50/75

	710	720	730
698	CTTTTGACAAACTATCGTCAACACCTTGATTACAGGT		
700	CTTTTGACAAACTATCGTCAACACCTTGATTACAGGT		
700	CTTTTGACAAACTATCGTCAACACCTTGATTACAGGT		
477	CTTTTGACAAACTATCGTCAACACCTTGATTACAGGT		
470	CTTTTGACAAACTATCGTCAACACCTTGATTACAGGT		
	780	790	800
768	ACAAGTATGAGGGTGGTTTGGAAGCTTTTCTCGTGG		
770	ACAAGTATGAGGGTGGTTTGGAAGC	TTTCTCGTGG	
770	ACAAGTATGAGGGTGGTTTGGAAGC	TTTCTCGTGG	
547	ACAAGTATGAGGGTGGTTTGGAAGCTTTTCTCGTGG		
540	ACAAGTATGAGGGTGGTTTGGAAGCTTTTCTCGTGG		
	850	860	870
838	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCCAG		
839	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCCAG		
840	AGGTATCACTTACCGTGAGTGGGCTC	TTGGTGCCCAG	
617	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCCAG		
610	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCCAG		
	920	930	940
908	GACGCAAATGCTGAC	TTATGACTCGGAATGAATTTG	
909	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
910	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
687	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
680	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
	990	1000	1010
978	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
979	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
980	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
757	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
750	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		

Fig.10  
Sheet 6

Fig.10 SHEET 5

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

51/75

740	750	760	770	
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				10con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				11con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				19con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				86CON. SEQ
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				pcrsbe2con. seq
810	820	830	840	
TTATGAAA <b>G</b> AATGGGTTTCACTCGTAGTGCTAC				10con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				11con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				19con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				86CON. SEQ
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				pcrsbe2con. seq
880	890	900	910	
TCAGCTGCCCTCATTGG <b>G</b> GATTTCAACAATTGG				10con. seq
TCAGCTGCCCTCATTGGAGATTTCAACAATTGG				11con. seq
TCAGCTGCCCTCATTGGAGATTTCAACAATTGG				19con. seq
TCAGCTGCCCTCATTGGAGATTTCAACAATTGG				86CON. SEQ
TCAGCTGCCCTCATTGGAGATTTCAACAATTGG				pcrsbe2con. seq
950	960	970	980	
GTGTCTG <b>A</b> GAGATTTTTCTGCCAAATAATGTGG				10con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				11con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				19con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				86CON. SEQ
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				pcrsbe2con. seq
1020	1030	1040	1050	
GATACGTATGGACACTCCATCAGGTGTTAAGGA				10con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				11con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				19con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				86CON. SEQ
GATACG <b>Y</b> ATGGACACTCCATCAGGTGTTAAGGA				pcrsbe2con. seq

Fig. 10 SHEET 6

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

52/75

	1060	1070	1080
1048	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
1049	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
1050	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
827	TTCCATTCTGCTTGGATCAACTACTC--TACAGCTT		
820	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
	1130	1140	1150
1118	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
1119	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
1120	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
895	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
890	GATCCACCCGAAGAGGAGAGGTATRTCTTCCAACACC		
	1200	1210	1220
1188	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
1189	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
1190	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
965	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
960	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
	1270	1280	1290 *
1258	TCTTCCTCGCATAAAAAAAAGCTTGGGTACAATGCGGT		
1259	TCTTCCTCGCATAAAAAAA-GCTTGGGTACAATGCGCT		
1260	TCTTCCTCGCATAAAAAAA-GCTTGGGTACAATGCGCT		
1035	TCTTCCTCGCATAAAAAAA-GCTTGGGTACAATGCGCT		
1030	TCTTCCTCGCATAAAAAAA-SCTTGGGTACAATGCGGT		
	1340	1350	1360
1328	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTTGCA		
1328	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTTGCA		
1329	CGCTAGTTTTGGTTATCATGTCACAAATTTTTTTTGCA		
1104	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTTGCA		
1099	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTTGCA		

Fig.10  
Sheet 8

Fig.10 SHEET 7

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

53/75

1090	1100	1110	1120	
CCTGATGAAATTCCATATAATGGAATATATTAT				10con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				11con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				19con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				86CON. SEQ
CCTGATGAAATTCCATATAATGGAATATATTAT				pcrsbe2con. seq

1160	1170	1180	1190	
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				10con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				11con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				19con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				86CON. SEQ
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				pcrsbe2con seq

1230	1240	1250	1260	
AATTAAC TCATACGTGAATTTTAGAGATGAAGT				10con. seq
AATTAAC TCATACGTGAATTTTAGAGATGAAGT				11con. seq
AATTAAC TCATACGTGAATTTTAGAGATGAAGT				19con. seq
AATTAAC TCATACGTGAATTTTAGAGATGAAGT				86CON. SEQ
AATTAAC TCATACGTGAATTTTAGAGATGAAGT				pcrsbe2con. seq

1300	1310	1320	1330	
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				10con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				11con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				19con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				86CON. SEQ
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				pcrsbe2con. seq

1370	1380	1390	1400	
CCAAGCAGCCGTTTTGGAACGCCCGACGACCTT				10con. seq
CCAAGCAGCCGTTTTGGAACGCCCGACGACCTT				11con. seq
CCAAGCAGCCGTTTTGGAACGCCCGACGACCTT				19con. seq
CCAAGCAGCCGTTTTGGAACGCCCGACGACCTT				86CON. SEQ
CCAAGCAGCCGTTTTGGAACGCCCGACGACCTT				pcrsbe2con. seq

Fig. 10 SHEET 8

SUBSTITUTE SHEET (RULE 26)



54/75

	1410	1420	1430
1398	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1398	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1399	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1174	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1169	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
	1480	1490	1500
1468	CAAATAATACTTTAGATGGACTGAACATGTTTGACGG		
1468	CAAATAATACTTTAGATGGACTGAACATGTTTGACGG		
1469	CAAATAATACTTTAGATGGACTGAACATGTTTGACGG		
1244	CAAATAATACTTTAGATGGACTGAACATGTTTGACGG		
1239	CAAATAATACTTTAGATGGACTGAACATGTTTGACGG		
	1550	1560	1570
1538	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1538	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1539	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1314	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1309	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
	1620	1630	1640
1608	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1607	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1609	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1384	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1379	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
	1690	1700	1710
1678	TGTACTCACCACGGATTATCGGTGGGATTCACTGG		
1677	TGTATACTCACCACGGATTATCGGTGGGATTCACTGG		
1679	TGTATACTCACCACGGATTATCGGTGGGATTCACTGG		
1454	TGTATACTCACCACGGATTATCGGTGGGATTCACTGG		
1449	TGTATACTCACCACGGATTATCGGTGGGATTCACTGG		

Fig. 10  
Sheet 10

Fig. 10 SHEET 9



55/75

1440	1450	1460	1470
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	10con. seq	
TTGTTCTCATGGACAT	GTTTACAGCCATGCAT	11con. seq	
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	19con. seq	
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	86CON. SEQ	
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	pcrsbe2con. seq	

1510	1520	1530	1540
CACAGATAGTTGTTACTTTCACTCTGGAGCTCG		10con. seq	
CACCGATAGTTGTTACTTTCACTCTGGAGCTCG		11con. seq	
CACCGATAGTTGTTACTTTCACTCTGGAGCTCG		19con. seq	
CACCGATAGTTGTTACTTTCACTCTGGAGCTCG		86CON. SEQ	
CACAGATAGTTGTTACTTTCACTCTGGAGCTCG		pcrsbe2con. seq	

1580	1590	1600	1610
TATGGAAACTGGGAGGTACTTAGGTATCTTCTC		10con. seq	
TATGGAAACTGGGAGGTACTTAGGTATCTTCTC		11con. seq	
TATGGAAACTGGGAGGTACTTAGGTATCTTCTC		19con. seq	
TATGGAAACTGGGAGGTACTTAGGTATCTTCTC		86CON. SEQ	
TATGGAAACTGGGAGGTACTTAGGTATCTTCTC		pcrsbe2con. seq	

1650	1660	1670	1680
ATGGATTTAGATTTGATGGTGTGACATCAATGA		10con. seq	
ATGGATTTAGATTTGATGGTGTGACATCAATGA		11con. seq	
ATGGATTTAGATTTGATGGTGTGACATCAATGA		19con. seq	
ATGGATTTAGATTTGATGGTGTGACATCAATGA		86CON. SEQ	
ATGGATTTAGATTTGATGGTGTGACATCAATGA		pcrsbe2con. seq	

1720	1730	1740	1750
GAACTACGAGGAATACTTTGGACTCGCAACTGA		10con. seq	
GAACTACGAGGAATACTTTGGACTCGCAACTGA		11con. seq	
GAACTACGAGGAATACTTTGGACTCGCAACTGA		19con. seq	
GAACTACGAGGAATACTTTGGACTCGCAACTGA		86CON. SEQ	
GAACTACGAGGAATACTTTGGACTCGCAACTGA		pcrsbe2con. seq	

Fig. 10 SHEET 10



56/75

	1760	1770	1780
1748	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1747	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1749	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1524	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1519	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
	1830	1840	1850
1818	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1817	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1819	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1594	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1589	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
	1900	1910	1920
1888	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1887	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1889	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1664	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1659	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
	1970	1980	1990
1958	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1957	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1959	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1734	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1729	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
	2040	2050	2060
2028	GATCAAGCTCTAGTCGGTGATAAAACTATAGCATTCT		
2027	GATCAAGCTCTAGTCGGTGATAAAACTATAGCATTCT		
2029	GATCAAGCTCTAGTCGGTGATAAAACTATAGCATTCT		
1804	GATCAAGCTCTAGTCGGTGATAAAACTATAGCATTCT		
1799	GATCAAGCTCTAGTCGGTGATAAAACTATAGCATCT		

Fig.10  
Sheet 12

Fig. 10 SHEET 11

SUBSTITUTE SHEET (RULE 26)



57/75



1790	1800	1810	1820	
CTTATTTCATGGGCTTTTCCCAGATGCAATTACC	10con. seq			
CTTATTTCATAGGCTTTTCCCAGATGCAATTACC	11con. seq			
CTTATTTCATGGGCTTTTCCCAGATGCAATTACC	19con. seq			
CTTATTTCATGGGCTTTTCCCAGATGCAATTACC	86CON. SEQ			
CTTATTTCACGGGCTTTTCCCAGATGCAATTACC	pcrsbe2con. seq			
1860	1870	1880	1890	
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT	10con. seq			
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT	11con. seq			
TTCCCGTCCAAGAAGGGGGGTGTTGGCTTTGACT	19con. seq			
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT	86CON. SEQ			
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT	pcrsbe2con. seq			
1930	1940	1950	1960	
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT	10con. seq			
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT	11con. seq			
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT	19con. seq			
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT	86CON. SEQ			
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT	pcrsbe2con. seq			
2000	2010	2020	2030	
TCGGAAAAGTGTGTTTCATACGCTGAAAGTCAT	10con. seq			
TCGGAAAAGTGTGTTTCATACGCTGAAAGTCAT	11con. seq			
TCGGAAAAGTGTGTTTCATACGCTGAAAGTCAT	19con. seq			
TCGGAAAAGTGTGTTTCATACGCTGAAAGTCAT	86CON. SEQ			
TCGGAAAAGTGTGTTTCATMCGCTGAAAGTCAT	pcrsbe2con. seq			
2070	2080	2090	2100	
GGCTGATGGACAAGGATATGTATGATTTTATGG	10con. seq			
GGCTGATGGACAAGGATATGTATGATTTTATGG	11con. seq			
GGCTGATGGACAAGGATATGTATGATTTTATGG	19con. seq			
GGCTGATGGACAAGGATATGTATGATTTTATGG	86CON. SEQ			
GGCTGATGGACAAGGATATGTATGATTTTATGG	pcrsbe2con. seq			

Fig. 10 SHEET 12



58/75

	2110	2120	2130
2098	CTCTGGATAGACCGT	CAACATCATT	AATAGATCGTGG
2097	CTCTGGATAGACCG	CAACATCATT	AATAGATCGTGG
2099	CTCTGGATAGACCGT	CAACATCATT	AATAGATCGTGG
1874	CTCTGGATAGACCG	CAACATCATT	AATAGATCGTGG
1869	CTCTGGATAGACCGY	CAACAY	CATT
			AATAGATCGTGG
	2180	2190	2200
2168	TATGGGATTAGGAGGAGAAGGGT	ACCTAAATTT	CATG
2167	TATGGGATTAGGAGGAGAAGGGT	ACCTAAATTT	CATG
2169	TATGGGATTAGGAGGAGAAGGGT	ACCTAAATTT	CATG
1944	TATGGGATTAGGAGGAGAAGGGT	ACCTAAATTT	CATG
1939	TATGGGATTAGGAGGAGAAGGGT	ACCTAAATTT	CATG
	2250	2260	2270
2238	TTCCCTAGGGCTGAACAACACCT	TCTCTGATGGCT	CAG
2237	TTCCCTAGGGCTGA	CAACACCT	TCTCTGATGGCTCAG
2239	TTCCCTAGGGCTGAACAACACCT	TCTCTGATGGCT	CAG
2014	TTCCCTAGGGCTGAACAACACCT	TCTCTGATG	ACTCAG
2009	TTCCCTAGGGCTGAR	CAACACCT	TCTCTGATGGCTCAG
	2320	2330	2340
2308	GCAGACGGAGATTTGACCTGGGAGAT	GCAGAATATTT	
2307	GCAGACGGAGATTTGACCTGGGAGAT	GCAGAATATTT	
2309	GCAGACGGAGATTTGACCTGGGAGAT	GCAGAATATTT	
2084	GCAGACGGAGATTTGACCTGGGAGAT	GCAGAATATTT	
2079	GCAGACGGAGATTTGACCTGGGAGAT	GCAGAATATTT	
	2390	2400	2410
2378	TATGCAGTATCTTGAAGATAAATAT	GAGTTTATGACT	
2377	TATGCAGTATCTTGAAGATAAATAT	GAGTTTATGACT	
2379	TATGCAGTATCTTGAAGATAAATAT	GAGTTTATGACT	
2154	TATGCAGTATCTTGAAGATAAATAT	GAGTTTATGACT	
2149	TATGCAGTATCTTGAAGATAAATAT	GAGTTTATGACT	

Fig.10  
Sheet 14

Fig. 10 SHEET 13



59/75

2140	2150	2160	2170	
GATAGCATT	A	CACAAGATGATTAGGCTTGTAAC		10con. seq
GATAGCATT	T	GCACAAGATGATTAGGCTTGTAAC		11con. seq
GATAGCATT	T	GCACAAGATGATTAGGCTTGTAAC		19con. seq
GATAGCATT	T	GCACAAGATGATTAGGCTTGTAAC		86CON. SEQ
GATAGCATT	T	GCACAAGATGATTAGGCTTGTAAC		pcrsbe2con. seq

2210	2220	2230	2240	
GGAAATGAATT	TCGGCCACCCTGAGTGGATTGAT			10con. seq
GGAAATGAATT	TCGGCCACCCTGAGTGGATTGAT			11con. seq
GGAAATGAATT	TCGGCCACCCTGAGTGGATTGAT			19con. seq
GGAAATGAATT	TCGGCCACCCTGAGTGGATTGAT			86CON. SEQ
GGAAATGAATT	TCGGCCACCCTGAGTGGATTGAT			pcrsbe2con. seq

2280	2290	2300	2310	
TAATTCCC	A	AGAAACCAATTCAGTTATGATAAAT		10con. seq
TAATTCCC	G	AGAAACCAATTCAGTTATGATAAAT		11con. seq
TAATTCCC	G	AGAAACCAATTCAGTTATGATAAAT		19con. seq
TAATTCCC	G	AGAAACCAATTCAGTTATGATAAAT		86CON. SEQ
TAATTCCC	G	AGAAACCAATTCAGTTATGATAAAT		pcrsbe2con. seq

2350	2360	2370	2380	
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				10con. seq
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				11con. seq
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				19con. seq
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				86CON. SEQ
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				pcrsbe2con. seq

2420	2430	2440	2450	
TCAGAACACCAGTTCATATCACGAAAGGATGAA				10con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				11con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				19con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				86CON. SEQ
TCAGAACACCAGTTCATATCACGAAAGGATGAA				pcrsbe2con. seq

Fig. 10 SHEET 14



WO 96/34968

PCT/GB96/01075

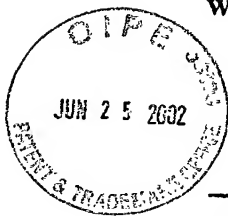
60/75

	2460	2470	* 2480
2448	GGAGATAGGATGATTGTATTTGAAAAAGGAAACCTAG		
2447	GGAGATAGGATGATTGTATTTGAAA <b>G</b> AGGAAACCTAG		
2449	GGAGATAGGATGATTGTATTTGAAAAAGGAAACCTAG		
2224	GGAGATAGGATGATTGTATTTGAAAAAGGAAACCTAG		
2219	GGAGATAGGATGATTGTATTTGAAA <b>R</b> AGGAAACCTAG		
			*
	2530	2540	2550
2518	ATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAA		
2517	ATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAA		
2519	ATTCAGACTATCGCATAG <b>C</b> CTGCCTGAAGCCTGGAAA		
2294	ATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAA		
2289	ATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAA		
	2600	2610	2620
2588	TTTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAA		
2587	TTTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAA		
2589	TTTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAA		
2364	TTTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAA		
2359	TTTTGGTGGCTTCGGGAGAATTGATCATAATGCCGAA		
	2670	2680	* 2690
2658	CCTCGTTCAATTATGGTGTATGCACCTAGTAGAACAG		
2657	CCT <b>I</b> GTTCAATTATGGTGTATGCACCTAGTAGAACAG		
2659	CCTCGTTCAATTATGGTGTATGCACCT <b>I</b> GTAA <b>A</b> ACAG		
2434	CCTCGTTCAATTATGGTGTATGCACCT <b>I</b> GTAGAACAG		
2429	CCTCGTTCAATTATGGTGTATGCACCTAGTAGAACAG		
			*
	2740	2750	2760
2722	-----AAGAAGAAGAAGAAGAAGAAGTAGCAGTAGT		
2722	----- <b>AG</b> AAGTAGCAGTAGT		
2729	AAGAAGAAGAAGAAGAAGAAGAAGAAGTAGCAG <b>C</b> AGT		
2501	AAGAAGAAGAAGAAGAAGAAGAAGAAGTAGCAGTAGT		
2499	<b>N</b> AGAAGAAGAAGAAG <b>A</b> N-----		

Fig. 10  
Sheet 16

Fig. 10 SHEET 15

SUBSTITUTE SHEET (RULE 26)



WO 96/34968

PCT/GB96/01075

61/75

2490	2500	2510	*	2520	
TTTTTGTCTTTAATTTTCACTGGACAAAAGGCT					10con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					11con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					19con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					86CON. SEQ
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					pcrsbe2con. seq
2560	2570	2580		2590	
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					10con. seq
ATACAAGGTTGCTTGGACTCAGATGATCCACT					11con. seq
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					19con. seq
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					86CON. SEQ
ATACAAGGTTGCTTGGACTCAGATGATCCACT					pcrsbe2con. seq
2630	*	2640	*	2650	2660
TATTTACCTTTGAAGGATGGTATGATGATCGT					10con. seq
TATTTACCTCTGAAGGATCGTATGATGATCGT					11con. seq
TATTTACCTTTGAAGGATGGTATGATGATCGT					19con. seq
TATTTACCTTTGAAGGATGGTATGATGATCGT					86CON. SEQ
TATTTACCTCTGAAGGATCGTATGATGATCGT					pcrsbe2con. seq
2700	2710	2720		2730	
CAGTGGTCTATGCACTAGTAGACAAAG----					10con. seq
CAGTGGTCTATGCACTAGTAGACAAAGCT----					11con. seq
CAGTGGTCTATGCACTAGTAGACAAAGAGAAG					19con. seq
CAGTGGTCTATGCACTAGTAGACAAAG--AAG					86CON. SEQ
CAGTGGTCTATGCACTAGTAGACAAAGNTAGAAG					pcrsbe2con. seq
2770	2780	2790		2800	
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					10con. seq
AGAAGAACTTCTG-----AAGAATGAACGAA					11con. seq
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					19con. seq
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					86CON. SEQ
-----CCGNNGAAGAAT-----					pcrsbe2con. seq

Fig. 10 SHEET 16



62/75

	2810	2820	2830
2786	CTTGTGATCGCGTTGAAAGATTTGAACGC	CACATAGA	
2764	CTTGTGATCGCGTTGAAAGATTTGAACG	TAC	TGG
2799	CTTGTGATCGCGTTGAAAGATTTGAACG	CTACATAGA	
2571	CTTGTG		
2529			
	2880	2890	2900
2856	CTTGGCGGAATTT	CATGTGACAACA	-GGTTTGCAATT
2829	CTTGGCGGAATTT	CATGTGACAACA	AGGTTTGCA
2869	CTTGGCGGAATTT	CATGTGACAACA	-GGTTTGCAATT
2576			
2529			
	2950	2960	2970
2925	GAGATGAAGTGCTGAACAAA	ACATATGTAAAATCGA	
2899	GAGATGAAGTGCTGAACAAA	--CATATGTAAAATCGA	
2938	GAGATGAAGTGCTGAACAAA	--CATATGTAAAATCGA	
2576			
2529			
	3020	3030	
2995	CCTGCAG		CC
2967	CCTGCAG		CC
3006	CCTGCAG	GCCGGGGGACCCCTTAGTT	CT
2576			
2529			

Fig.10  
Sheet 18

Fig. 10 SHEET 17



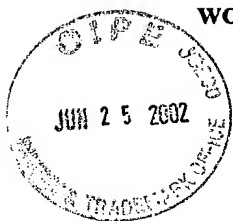
63/75

2840	2850	2860	2870	
GCTTCTTGACGTATCTGGCAATATTGCAT	11AGT	10con. seq		
--TCATCCACATA--GAGCTTCTTGACATCAGT		11con. seq		
GCTTCTTGACGTATCTGGCAATATTGCATCAGT		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
2910	2920	2930	2940	
CTTTCCACTATTAGTAGTGCAACGATATACGCA		10con. seq		
CTTTCCACTATTAGTAGTGCAACGATATACGCA		11con. seq		
CTTTCCACTATTAGTAGTGCAACGATATACGCA		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
2980	2990	3000	3010	
TGAATTTATGTCGAATGCTGGGACGATCGAATT		10con. seq		
TGAATTTATGTCGAATGCTGGGACGATCGAATT		11con. seq		
TGAATTTATGTCGAATGCTGGGACGATCGAATT		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
		10con. seq		
		11con. seq		
		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		

Fig. 10 SHEET 18







WO 96/34968

10 000 447 000 000

PCT/GB96/01075

65/75

Nco I  
BstX I  
TCATTAAAGAGGAGAAATTAACTATGAGAGGATCTCACCATCACCATCACCATGGGATCT  
AGTAATTTCTCCCTCTTAATTGATACTCTCCTAGAGTGGTAGTGGTAGTACCCCTAGA  
M R G S H H H H H G I

60

EcoRI

TGGCTGAAAAGTCITTTACAAATTCGAATTCGACCTTCTACAGTTGCAGCATCGGGGA  
ACCGACTTTTCAGAAGAATGTTAAGGCTTAAGGCTGGAAGATGTCAACGTCGTAGCCCCCT  
L A E K S S Y N S E F R P S T V A A S G

120

AAGTCCTTGTGCCTGGAACCCAGAGTGATAGCTCCTCATCTCAACAAACCAATTTGAGT  
TTCAGGAACACGGACCTTGGGTCTCACTATCGAGGAGTAGGAGTTGTTGTTAAACICA  
K V L V P G T Q S D S S S S T N Q F E

180

TCACTGAGACATCTCCAGAAAATTCCTCCAGCATCAACCTGATGATAGTTCACCAATGG  
AGTGACTCTGTAGAGGCTCTTTAAGGGTCGTAGTTGACTACATCTATCAAGTTGTTACC  
F T E T S P E N S P A S T D V D S S T M

240

SUBSTITUTE SHEET (RULE 26)

Fig.12  
SHEET 1



WO 96/34968

14 09 30 45 44 00 00 00 00

PCT/GB96/01075

66/75

Fig.12  
SHEET 2

AACACGCTAGCCAGATTAAAACTGAGAACGATGACGTTGAGCCGTC AAGTGATCTTACAG  
TTGTGGCATCGGTCTAATTTTGACTCTTTGCTACTGCAACTCGGCAGTTCAC TAGAATGTC  
E H A S Q I K T E N D D V E P S S D L T 300

GAAGTGTGAAGAGCTGGATTTTGCTTCACTACACTACAAGAAGGTGTTAAACTGG  
CTTCACAACCTTCTCGACCTAAACGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACC  
G S V E E L D F A S S L Q L Q E G G K L 360

AGGAGTCTAAACATTAAATACTTCTGAAGAGAGACAATTATTGATGAATCTGATAGGATCA  
TCCTCAGATTTTGTAATTTATGAAGACTTCTCTGTTAATAACTACTTAGACTATCCTAGT  
E E S K T L N T S E E T I I D E S D R I 420

GAGAGAGGGGCATCCCTCCACCTGGACTTGGTCAGAAGATTATGAATAGACCCCTTT  
CTCTCTCCCGTAGGGAGGTGGACCTGAACCCAGTCTTCTAAATACTTTATCTGGGGGAAA  
R E R G I P P P G L G Q K I Y E I D P L 480

Hinc II

TGACAAACTATCGTCAACACCTTGATTACAGGTATTCACAGTACAAGAACTGAGGGAGG  
ACTGTTTGATAGCAGTTGTGGAACCTAATGTCCATAAGTGTCATGTTCTTTGACTCCCTCC  
L T N Y R Q H L D Y R Y S Q Y K K L R E 540

SUBSTITUTE SHEET (RULE 26)



67/75

Fig 12  
SHEET 3

Hind III

CAATTGACAAGTATGAGGTGGTTTGGGAAGCTTTTCTCGTGGTTATGAAAAATGGGTT  
 GTTAACTGTTTACTCTCCACCAACCTTCGAAAAAGACCAATACTTTTACCCAA  
 A I D K Y E G G L E A F S R G Y E K M G

600

Pvu II

TCACTCGTAGTGCTACAGGTATCACTTACCGTGAGTGGCTCCCTGGTCCCAGTCAGCTG  
 AGTGAGCATCACGATGTCCATAGTGAATGGCACTCACCCGAGGACCACGGGTCAGTCGAC  
 F T R S A T G I T Y R E W A P G A Q S A

660

CCCTCATTGGAGATTTCACAAATTGGGACGCAAAATGCTGACATTATGACTCGGAATGAAT  
 GGGAGTAACCTCTAAAGTTGTTAACCCTGCGTTTACGACTGTAATACTGAGCCTTACTTA  
 A L I G D F N N W D A N A D I M T R N E

720

TTGGTGTCTGGGAGATTTTCTGCCAAATAATGTGGATGGTTCTCTGCAATTCCTCATG  
 AACCACAGACCCCTCTAAAAGACGGTTTATTACACCTACCACGAGGACGTTAAGGAGTAC  
 F G V W E I F L P N N V D G S P A I P H

780



WO 96/34968

PCT/GB96/01075

68/75

SnaBI

GGTCCAGAGTGAAGATACGTATGGACACTCCATCAGGTGTTAAGGATTCCTTGCTT 840

CCAGGTCTCACTTCTATGCATACCTGTGAGGTAGTCCACAATTCCTAAGGTAAGGACGAA

G S R V K I R M D T P S G V K D S I P A

GGATCAACTACTCTTCACAGCTTCCTGATGAAATCCATATATAATGGAATATATTGATC 900

CCTAGTTGATGAGAAGTGTCGAAGGACTACTTTAAGGTATATTACCTTATATAATACTAG

W I N Y S S Q L P D E I P Y N G I Y Y D

CACCCGAAGAGGAGGTATATCTTCCAACACCCACGGCCAAAGAAACCAAGTCGCTGA 960

GTTGGCTTCTCCTCTCCATATAGAAGGTTGTGGTGCCGGTTCTTTGGTTTCAGCGACT

P P E E R Y I F Q H P R P K K P K S L

GAATATATGAATCTCATATTGGAAATGAGTAGTCCGGAGCCTAAATTAACCTCATACGTTGA 1020

CTTATATACTTAGAGTATAACCTTACTCATCATCAGGCCCTCGGATTTTAAATTGAGTATGCACT

R I Y E S H I G M S S P E P K I N S Y V

SUBSTITUTE SHEET (RULE 26)

Fig.12  
SHEET 4



WO 96/34968

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PCT/GB96/01075

69/75

Fig.12  
SHEET 5

	Xmn I	HinD III	
			1080
ATTTAGAGATGAAGTTC	TTCC	TCGCATAAAAAGCTT	GGGIACAATGCGGTGCAAAATTA
TAAATCTCTACTTCAAG	AAGG	AGCGTATTTTTCGA	ACCCATGTTACGCCACGTTTAAAT
N F R D E V L P R I	K	L	G Y N A V Q I
			1140
TGGCTATTCAAGAGCAT	TCTT	ATTATGCTAGTTT	IGGTTATCAIGTCACAAATTTTTTG
ACCGATAAGTTCGTAAG	AATA	TACGATCAAAACCA	ATAGTACAGTGTTTAAAAAAC
M A I Q E H S Y Y A	S	F	G Y H V T N F F
			1200
CACCAAGCAGCCGTTT	TGGA	ACGCCGACGACCTT	AAGTCTTTIGATTGATAAAGCTCATG
GTGGTTCGTCGGCAAA	ACCTT	GCGGCTGCTGGAAT	TCAGAACTAACTATTTTCGAGTAC
A P S S R F G T P D	D	L	K S L I D K A H
			1260
AGCTAGGAATTGTTGT	CTCAT	GACATTGTTTCAC	AGCCATGCATCAAAATAACTTTAG
TCGATCCCTTAACAACA	AGAGT	ACCTGTAACAAGT	GTGCGTACGTAGTTTATTATGAAATC
E L G I V V L M D I	V	H	S H A S N N T L

Nsi I

SUBSTITUTE SHEET (RULE 26)



70/75

Sac I

ATGGACTGAACATGTTGACGGCACCAGATAGTTGTTACTTTCACTCTGGAGCTCGTGGTT  
TACCTGACTTGTACAAACTGCCGTGGCTATCAACAATGAAAGTGAGACCTCGAGCACC  
D G L N M F D G T D S C Y F H S G A R G

1320

ATCATGGATGTTGGGATTCCTCCGCCCTTTTAACTATGGAACCTGGGAGGTACTTAGGTATC  
TAGTAACCTACACCCCTAAGGGCGGAAATTTGATACCTTTGACCCCTCCATGAATCCATAG  
Y H W M W D S R L F N Y G N W E V L R Y

1380

TTCTCTCAAATGCGAGATGGTGGTTGGATGAGTTCAAAATTTGATGATTAGATTGATG  
AAGAGAGTTTACGCTCTACCAACCACTACTCAAGTTTAACTACCTAAATCTAAACTAC  
L L S N A R W W L D E F K F D G F R F D

1440

GTGTGACATCAATGATGTATACTCACCACGGATTATCGGTGGGATTCTGCGGAACCTACG  
CACACTGTAGTTACTACATATGAGTGGTGCCTAATAGCCACCCTAAGTGACCCCTTGATGC  
G V T S M M Y T H H G L S V G F T G N Y

1500

Fig. 12  
SHEET 6



WO 96/34968

PCT/GB96/01075

71/75

Hinc II

AGGAATACTTTGGACTCGCAACTGATGTGGATGCTGTGTGTGTATCTGATGCTGGTCAACG 1560

TCCTTATGAACCTGAGCGTTGACTACACCTACGACAACACATAGACTACGACCAGTTGC

E E Y F G L A T D V D A V V Y L M L V N

ATCTTATTCATGGCCTTTCCAGATGCAATTACCAATTGGTGAAGATGTTAGCGGAATGC 1620

TAGAATAAGTACCCGAAAGGGTCTACGTTAATGGTAACCACTTCTACAATCGCCTTACG

D L I H G L F P D A I T I G E D V S G M

CGACATTTTGTATTCGTTCAAGATGGGGTGTGTGGCTTIGACTATCGGCTGCATATGG 1680

GCTGTAAACATAAGGGCAAGTTCTACCCCCACAAACCGAACTGATAGCCGACGTATACC

P T F C I P V Q D G G V G F D Y R L H M

CAATTGCTGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGAGTGGTG 1740

GTTAACGACTATTTACCTAACTCAACGAGTCTTTGCCCTACTCCTAACCTCTCACCCAC

A I A D K W I E L L K K R D E D W R V G

ATATTGTTTCATACACTGACAAATAGAAGATGGTCGGAAGAGTGTGTTTCATACGCTGAAA 1800

TATAACAAGTATGTGACTGTTTATCTTCTACCAGCCTTTTCACACAAAGTATGCGACTTT

D I V H T L T N R R W S E K C V S Y A E

SUBSTITUTE SHEET (RULE 26)

Fig 12  
SHEET 7

72/75

Fig 12  
SHEET 8

1860  
GTCATGATCAAGCTCTAGTCGGTGATAAACTATAGCATTCGGCIGATGGACAAGGATA  
CAGTACTAGTTCGAGATCAGCCACTATTTTGATATCGTAAGACCGACTACCTGTTCCTAT  
S H D Q A L V G D K T I A F W L M D K D

1920  
TGTATGATTTTATGGCTCTGGATAGACCGCCCAACATCATTAATAGATCGTGGGATAGCAT  
ACATACTAAATACCGAGACCTATCTGGCGTTGTAGTAATTAATCAGCACCCCTATCGTA  
M Y D F M A L D R P P T S L I D R G I A

Asp 718  
Kpn I

1980  
TGCACAAGATGATTAGGCTTGTAACATGGGATTAGGAGGAGAAGGTACCTAAATTCA  
ACGTGTTCTACTAATCCGAACATTGATACCCCTAATCCCTCTCTCCCATGGATTAAAGT  
L H K M I R L V T M G L G G E G Y L N F

EcoR I

2040  
TGGGAATGAATTCGGCCACCCCTGAGTGGATTGATTTCCCTAGGGCTGAACAACACCTCT  
ACCCTTTACTTAAGCCGGTGGGACTCACCTAACTAAAGGGATCCCGACTTGTGTGGAGA  
M G N E F G H P E W I D F P R A E Q H L

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TTG C C T T G G A C T C A G A T G A T C C A C T T T T T G G T G G C T T C G G G A G A A T T G A T C A T A A T G C C G  
 A A C G G A A C C T G A G T C T A C T A G G T G A A A A C C A C C G A A G C C T C T T A A C T A G T A T T A C G G C  
 V A L D S D D P L F G G F G R I D H N A

**Ssp 1**

AAATAATTTACCTTTGAAGGATGGTATGATGATGATCTCTCGTTCAATTATGGTGTATGCAC  
TTTATAAGTGGAACTTCCTACCATCTACTAGCAGGAGCAAGTTAATACCACATACGTG  
E Y F T F E G W Y D D R P R S I M V Y A

CTTGTAGAACAGCAGTGGTCTATGCACTAGTAGACAAAGAAGAAGAAGAAG  
GAACATCTTGTGTCACCGATACGTCATCTGTTCTTCTTCTTCTTCTTCTTC  
P C R T A V V Y A L V D K E E E E E E

AAGAAGAAGTAGCAGTAGTAGAAGAAGTAGTAGAAGAAGATGAACGAACTTGTG  
 TTCTTCTTCATCGTCATCATCTTCTTCATCATCATCTTCTTCTTACTTGTCTTGAACAC  
 E E E V A V V E E V V V E E E

2578

Fig 12  
SHEET 10

75/75

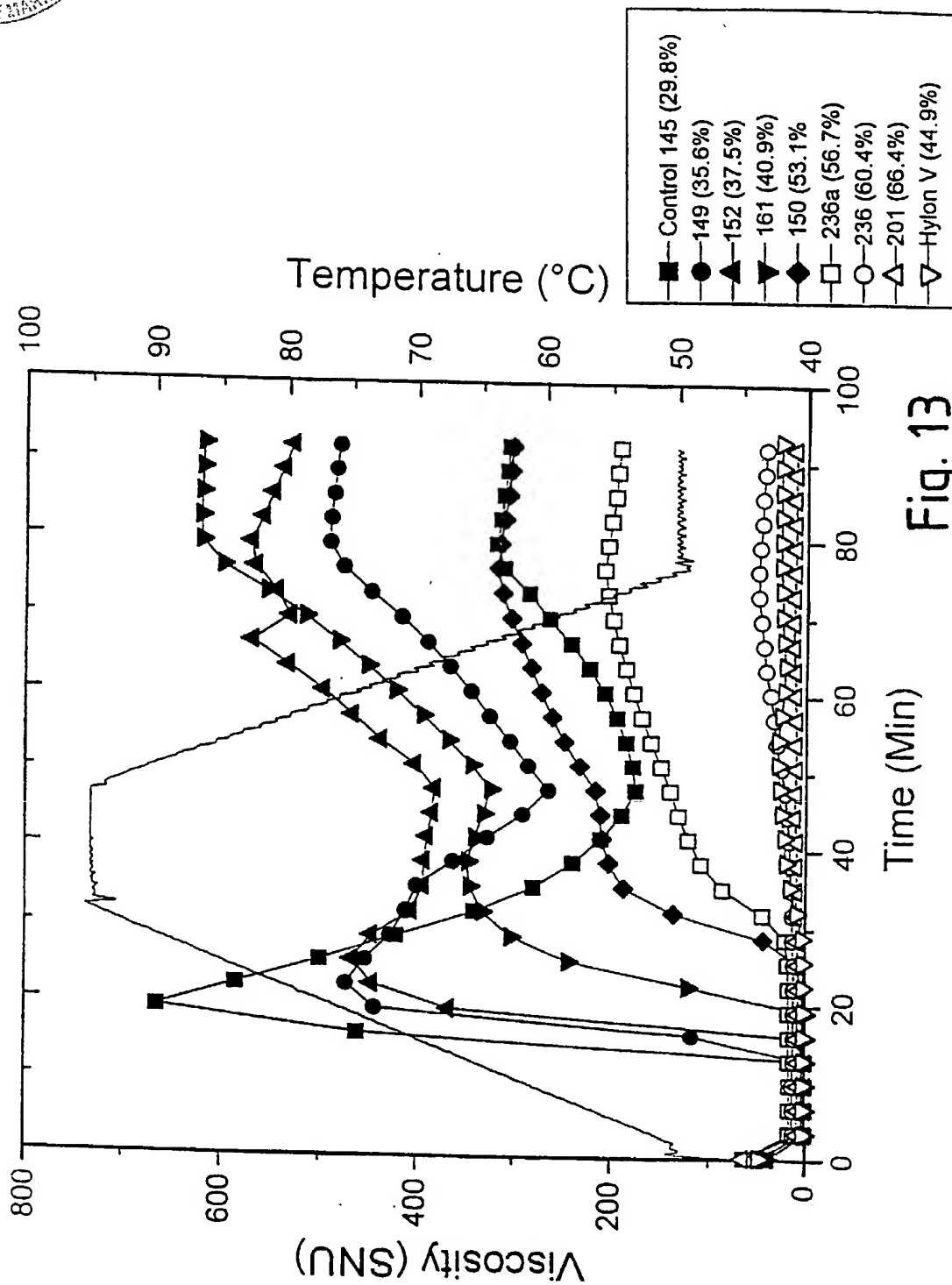
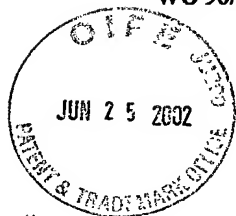


Fig. 13